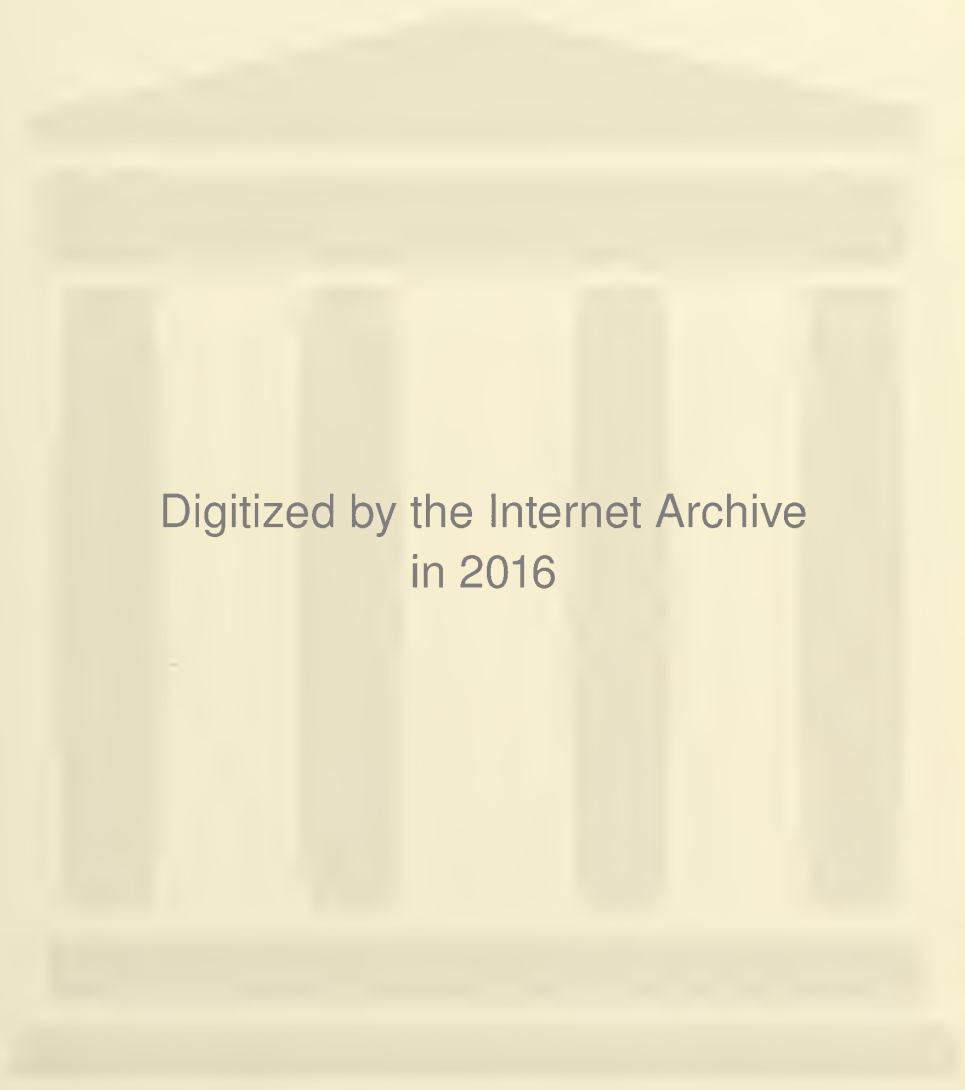


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ANESTHETIC MANAGEMENT OF CHILDREN

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Pediatric surgery has progressed remarkably in recent years. This advance is accompanied by a comparable advance in pediatric anesthesia, each contributing to and stimulating the other. As adult surgery must be modified to be suitable to the practice of pediatric surgery, so must anesthesia be modified in order to be satisfactory for children. It has been said that surgery may be major or minor, but there is no such thing as a minor anesthetic, and this is especially true in pediatric anesthesia, as changes in condition may occur more suddenly, and with more profoundness, it seems, than in the adult. Difference in rate of metabolism, respiration, elasticity of tissues, ability to adapt to environment, sensitivity of reflexes, nervous tissue, and size of the infant or child necessitates that adaptations be made. Drugs and dosages, equipment, fluid management, time of operation, and method of psychic approach are to be changed.

It is gratifying to see some of the excellent results obtained when good surgery is combined with proper anesthetic management. It is true that patients may, and do, stand a great deal of abuse from the anesthesia in some cases and yet seem to recover, being none the worse from their experience. Anesthetic deaths are not frequent even in

the hands of the inexperienced if too many liberties are not taken, but it is the few lives that can be saved that make anesthesia well worth study by the physician; and the reduction in morbidity that can be accomplished by the trained anesthesiologist is also a major accomplishment. The anesthesiologist who properly checks the patient preoperatively, guides the child through a specially tailored anesthesia course to fit his specific needs, and who follows the child through the postoperative course with regulation of sedation and fluid balance, and maintains vigilance over the respiratory and circulatory systems, may well feel just as much a part in the progress of the patient as the surgeon and other members of the team.

Anesthetic drugs produce a lowering of the basal metabolic rate in proportion to the depth of anesthesia. The metabolic rate is highest during childhood, peaks occurring at about 9 and 12 years. Following the second peak, a fairly rapid fall occurs to about plus 40 at 20 years, after which there is a slow decline into old age. This difference in metabolism is accountable for the fact that, on a weight basis, dosage of sedatives and anesthetic drugs may seem high in children.

In the infant the respiratory system is friable and delicate compared to that of the adult; therefore, extreme gentleness must be exercised in resuscitative measures or untold damage to the alveoli may result. The

From the Department of Anesthesiology of the Lloyd Noland Hospital.

Presented at the Staff Meeting of Children's Hospital, Birmingham, September 25, 1950.

exact pressure necessary to rupture alveoli in the infant is not known. Also, in very young patients the respiratory center and the reflexes which control respiration are very sensitive to depressant drugs, and they show hyperactivity to other stimuli.

The reflexes which regulate and modify the circulatory system are also more sensitive. The tissue elasticity is greatest in the young, allowing for good adaptation.

Because of the frequency of gastrointestinal upsets in children, dehydration and disturbances of fluid and electrolyte balance may occur rapidly. The addition of hyaluronidase to our armamentarium has increased the ease of administration of fluids in many cases since it permits rapid and less painful administration from the subcutaneous route.

The central nervous system may be more susceptible to direct nerve injury in children due to lack of myelination. Another difference in the central nervous system is the length of the spinal cord, which extends the entire length of the vertebral canal at an early fetal age and gradually recedes up the canal, as it grows less in length in proportion to the bony canal, until in the adult it lies at the lower border of the first lumbar vertebra.¹

Reflexes in general are more active in the younger age groups. Laryngospasm and coughing are easily started.

The actual size of the patient may be a great handicap unless special equipment is available to cope with the situation. The anesthesiologist must be careful that there is no excessive dead air space decreasing respiratory efficiency.

A different psychic approach is necessary. In many instances the patient can not understand what is taking place. In others it is best to explain to the patient just what is going to happen and what to expect. Often a more pleasant situation may be made from what might otherwise be a very terrifying experience. In most cases the child is unsuitable for regional anesthesia.

Preoperative sedation is used to alleviate apprehension, allow a smoother induction

of anesthesia, and to reduce the metabolic rate, thus reducing the amount of the anesthetic agent to be used. It is also used for the purpose of decreasing the secretions of the respiratory tract and to depress the vagal reflexes. Danger of aspiration during light stages of anesthesia is lessened and postoperative pulmonary pathology is decreased. Vagal reflexes are depressed, lessening the danger of sudden arrhythmias and cardiac abnormalities. In the Lloyd Noland Hospital, barbiturates and atropine or scopolamine are used liberally, while the opiates are used sparingly. The oral route of administration is never used as this may increase the incidence of vomiting during induction.

This discussion would not be complete without mentioning a few of the agents now in use, but no elaboration of techniques will be made. Of the anesthetic gases, nitrous oxide is quite satisfactory when used as a supplementary agent with basal anesthesia or other general anesthesia. Ethylene is slightly more potent than nitrous oxide, but the explosive hazard that it presents decreases its popularity, since the difference between it and nitrous oxide is so little. In most instances these two agents are not satisfactory if used alone. We believe it better to use combinations of agents than to "push" a weak agent and be on the borderline of hypoxia. Cyclopropane is a major anesthetic agent and may be used much as in adult anesthesia. The main contraindication to cyclopropane is an abnormality in the conductive mechanism of the heart. The small child often has insufficient tidal volume to cope with the dead air space of the circle absorber, and it is necessary to use the to-and-fro type of absorber. This need for additional equipment might limit the use of the gases in some instances.

Of the volatile agents, divinyl oxide (Vinethene) and ethyl ether enjoy the most popularity. Divinyl oxide is used quite frequently in some localities. It is very potent, with very rapid induction. Its primary use is for induction of ether anesthesia, and for short procedures limited to a few minutes. It is more toxic than ether and extreme caution must be maintained because of the rapidity with which patients may pass from one plane to another. Excess mucus is produced as with ether. Ethyl chloride and

1. Ranson, S. W., and Clark, S. L.: *The Anatomy of the Nervous System*, Philadelphia, W. B. Saunders Co., 1947, p. 22.

chloroform are not used by this group, nor by most anesthesiologists, as it is thought that the risk of possible liver damage or toxicity to the heart is not justified when unquestionably safer agents are available. Ether is by far the most widely used anesthetic agent in children. The relatively slow induction and passage from one stage to another with easy to follow signs afford a full potency anesthetic agent with a wide margin of safety.

Ether may be administered by the closed, semi-closed, or the open drop methods. This ease of administration and simplicity of equipment add to its popularity; also the agent is inexpensive. Explosive mixtures are produced when mixed with air, oxygen, or nitrous oxide; also, the agent is unpleasant to a majority of patients when used for induction, and the incidence of postoperative nausea and vomiting is high. We believe, however, that the most important factor in an anesthetic is safety to the patient, and this accounts for our wide use of ether.

Intravenous anesthesia, which to us is synonymous with sodium pentothal at the present time, is used, but with caution. The ease with which the respiratory centers are depressed in the very small child in proportion to the activity of the other reflexes makes us cautious in the use of sodium pentothal; however, for induction and very short procedures we do use the drug.

Basal anesthesia produced by tribromoethanol (Avertin) or sodium pentothal rectally is used quite safely and effectively. The method is pleasant and very satisfactory to the patient. Dropping to sleep quite naturally in his bed and thus being spared the usually frightening experience of the trip to the operating room is very desirable; however, this method should not be used unless there is adequate personnel for constant supervision from the time of induction until the actual operation is started, and continued until the patient has reacted sufficiently to be out of danger. This limitation prevents its widespread use. Care must be exercised postoperatively so that excess amounts of respiratory depressant drugs do not accumulate.

As has been mentioned, all methods of anesthesia can be used in children with some limitations. The open drop method is wide-

ly used for obvious reasons. A word of caution about adequate oxygen tension is warranted, as Faulconer et al.² demonstrated that the tension of oxygen under the mask is substantially reduced in many cases. We make liberal use of nasal oxygen as a precaution against hypoxia. The semi-closed and closed techniques may be used as in the adult if the size of the equipment is such that there is no excess in dead air space. In small children this practically eliminates the circle absorber technique, although shortened tubes and small masks make it satisfactory for larger children. The to-and-fro absorber is available in infant sizes and has a very small dead air space, so it is quite satisfactory.

We feel that spinal and other types of regional anesthesia are generally unsatisfactory in children. We do the majority of our abdominal surgery on adults under spinal anesthesia, and we occasionally use spinal anesthesia on a patient as young as 11 or 12 years of age depending on the individual case. However, there are reports of satisfactory usage of spinal anesthesia in children of all age groups when combined with heavy premedication and supplementary agents.³ Analeptic drugs are occasionally of value in children as in adults, but we always attempt to use more physiologic methods of resuscitation.

Pediatric anesthesia differs from adult anesthesia. If done on a physiologically sound basis, these differences resolve themselves into relatively minor changes. The special problems encountered present still a further stimulating challenge to have anesthesia to fit each case on a physiologic basis, and develop the art of anesthesia concomitantly.

2. Faulconer, Albert, Jr., and Latterell, K. E.: Tension of Oxygen and Ether Vapor During Use of the Semi-Open, Air Ether Method of Anesthesia, *Anesthesiology* 10: 247, 1949.

3. Slater, H. M., and Stephen, C. R.: Hypobaric Pontocaine Spinal Anesthesia in Children, *Anesthesiology* 11: 709, 1950.

The goal of tuberculosis control must be recognition of the patient as a person and of the program as a coordinated community undertaking. In that way, tuberculosis control can fulfill its promise of trail blazer and road marker for the newer programs in public health.—*Pub. Health Reports*, Joseph W. Mountin, M. D., February 2, 1951.

DIAGNOSIS AND EARLY TREATMENT OF POLIOMYELITIS

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One conclusion of a nation-wide survey by the American Academy of Pediatrics is that the majority of children in the United States are cared for by general practitioners. It is the family doctor then who, most often, must diagnose and perform the first phase of treatment in acute poliomyelitis. In Alabama, three centers of treatment—Birmingham, Montgomery and Mobile—are receiving patients for treatment who have been referred by general practitioners. At this time of year, perhaps a review of a few principles of diagnosis and treatment of this disease will be of benefit.

DIAGNOSIS

The onset of poliomyelitis is often extremely variable. The isolated case is seldom diagnosed promptly. During an epidemic many patients are seen who do not have poliomyelitis, although their illnesses are so diagnosed. In the epidemic of Montgomery County in 1949 patients first diagnosed as having poliomyelitis had a final diagnosis of tetanus, cerebral hemorrhage, acute alcoholism, meningitis, osteomyelitis, and so forth. If, then, there is such confusion, such variability of symptoms at the onset of this particular disease, a summary of the first-day symptoms is of value. Faber¹ has listed these as determined in 201 consecutive cases of the disease. Pain, most frequently headache, is the most common symptom. Nausea or vomiting, malaise, and stiffness of the neck are the next most frequent symptoms of the first day of illness. Nuchal rigidity is often not present in very young children who do, however, frequently exhibit quietness or marked drowsiness, which is so abnormal for a young baby. Infantile paralysis almost never begins suddenly but exhibits its presence over a period of hours or a few days, each symptom bringing forth others until the invasive process is complete.

It has been customary to divide poliomyelitis into peripheral and bulbar, although frequently both types are present simultaneously. Accepting such generalized terms, one should remember that poliomyelitis consists of lower motor neurone lesions in the peripheral type. All such damage to the nerves, whether due to infantile paralysis or to section of a peripheral nerve in an automobile accident, exhibits symptoms of flaccidity, atrophy and weakness or complete paralysis. This is in direct contrast to upper motor neurone lesions, such as one finds in cerebral hemorrhage, which always give rise to spasticity instead of flaccidity and there is an absence of atrophy. If these facts are kept in mind, the clinical diagnosis of poliomyelitis will be easier. Bulbar poliomyelitis produces symptoms referable to the last four cranial nerves and occasionally the seventh. The patient with beginning bulbar poliomyelitis usually first exhibits difficulty in swallowing, in raising the palate, in coughing or taking a deep breath, and occasional mental cloudiness or drowsiness. It is extremely important to remember that both peripheral and bulbar paralysis may be present in the same patient.

The laboratory offers the general practitioner a small amount of help. The spinal fluid usually shows an increased number of cells, but infrequently one may find a so-called normal spinal fluid even in the presence of obvious paralysis due to poliomyelitis. Frequently, the spinal fluid provides the only means of differentiating meningitis and infantile paralysis. If facilities are not available for examination of spinal fluid, the physician can still make the diagnosis, for in a few hours, or a day or so, the picture almost always becomes clear.

TREATMENT

Any discussion of the treatment of acute poliomyelitis would be lengthy unless one limits his remarks to something of an outline. Therefore, the "bones" will be given here and the "meat" may be found in textbooks and journals. In Montgomery we have found, as have others elsewhere, that

Read before the Association in annual session, Mobile, April 20, 1951.

1. Faber, Harold K.: Pathogenesis and Onset Symptoms of Poliomyelitis, *Pediatrics* 6: 488, 1950.

the cardinal principle of early treatment is to care for the patient at home or in the local hospital. The only deaths we have had were in those patients sent to Montgomery or who were taken from that city to another during the early phase of the disease. We realize that in the future we shall have patients to die who have been cared for without being subjected to long rides in cars or ambulances, but we know also that the mortality rate will be lower if patients are treated locally. It has been our experience that once the physician tells the parents that a child has poliomyelitis their first question is: "When shall we leave for Warm Springs?" I should like to state that the center at Warm Springs does not desire acute cases, receives them reluctantly, and that the medical authorities there agree the best site for treatment of a patient with early poliomyelitis is in his own community.

When one first sees a patient with acute poliomyelitis two questions should be answered: Can he breathe without difficulty? Can he swallow easily? If these two functions are normal, one can then assess muscle involvement and the general condition of the patient. We believe that sleep is the best medicine for the patient and do not awaken him except for absolute necessities, do not examine him frequently, and do permit him to lie in the most comfortable position. Any sedative is definitely contraindicated. The patient is isolated until twenty-four hours after the fever has subsided; and, as a general rule, fever persisting beyond ten days is not due to poliomyelitis. The patient with infantile paralysis is isolated for his own protection, not because he may give the disease to others. We believe that patients not only can be but should be admitted to the wards of general hospitals. If the patient's fever begins to rise or bulbar symptoms are appearing, one can attempt to dehydrate the patient. A mixture of two parts of 50 per cent glucose with one part normal saline has been used frequently. One can give 50 cc. of this mixture rapidly and obtain some degree of dehydration. This may be repeated every six hours, and often plasma administered in the same dose and frequency is a source of aid. If breathing becomes somewhat difficult, oxygen should be used. This is most easily administered by employing a nasal catheter with a flow

of 4 to 6 liters per minute. One should remember that if one deltoid muscle is involved the diaphragm is likely to be affected; if both deltoid muscles are extremely weak, then breathing is almost certain to be abnormal. In such an instance, oxygen should be on hand. Caffeine in a dose of 10 milligrams per kilogram of body weight will stimulate breathing. Neosynephrine is effective in checking a falling blood pressure and can be given in a dose of 0.1 milligram per kilogram of body weight. Most young adult males have trouble emptying the bladder for the first one or two weeks and Furmethide may be given. This drug should be used cautiously if there is respiratory difficulty as it sometimes increases salivation.

Bulbar poliomyelitis is usually associated with some degree of peripheral paralysis. Because the former is more ominous, the symptoms seen may vary in different cases but must be constantly watched for. Involvement of the palate, giving regurgitation through the nose, speech difficulty, loss of the gag reflex and failure of the palate to rise or the moving to one side of the throat when the patient says "Ah," is one of the first symptoms. Difficulty in swallowing, paresis or paralysis of the tongue, deficient cough signifying weakness of the diaphragm and/or larynx, and involvement of the respiratory and cardiac centers complete the symptom complex commonly called bulbar poliomyelitis. In treating such patients once again leave them alone except for necessary procedures or examinations although the patient may be very restless and uncomfortable. Elevation of the foot of the bed to aid tracheal drainage may help. Nasal oxygen is almost always required. Treatment for cerebral edema, mentioned above, should be given, and stimulants, if needed, should be employed; but if large quantities of caffeine are required the patient may stay awake and be restless. Difficulty in respiration usually suggests use of the iron lung but this is of little value in bulbar patients unless tracheotomy is done to permit suction or other procedures accompany it. The respirator finds its greatest use in the non-bulbar patients with involvement of the diaphragm and intercostal muscles. To differentiate the two, it is helpful to remember that if the intercostal muscles are tight,

the patient can exhale but finds it difficult to inhale; if the diaphragm is tight, exhaling is difficult.

The respirator is not employed until a patient 1) reaches the borderline of unconsciousness, 2) has excessive fatigue and lack of sleep, or 3) has become able to do without the respirator during the day but is unable to sleep at night without it. The respirator is undesirable because it sucks pharyngeal secretions into the lungs. Thus it is rare for the bulbar patient to live if put into a respirator. When used in non-bulbar patients, most of them become dependent upon the respirator and are afraid to be removed. The apparatus suppresses the development of the normal breathing mechanism and develops an abnormal type—usually neck breathing. Also, patients in respirators tend to develop spasm of other muscles and contractures. According to many statistics, patients who have been in respirators tend to have atelectasis during their stay in the machine or even after their removal, with an increase in the death rate.

The clinical criteria of when to employ a respirator in the non-bulbar patient might be as follows: First, the patient exhibits wakefulness, restlessness and anxiety, which are soon followed by an increase in the respiratory rate. A definite increase in respiratory effort as shown by an expiratory grunt, dilatation of the ala nasae, is next observed. This is associated with a disinclination to talk or with short, panting speech. If the patient attempts to count from one to ten, he may count to three or four before he stops to breathe. Coughing is found to be almost absent. Cyanosis next appears and the blood pressure usually begins to fall after a previous rise. Finally, the twitching of the corners of the mouth and refusal to answer questions or to count will momentarily precede coma. If the respirator is not used before these last two symptoms, the outcome is usually fatal.

To summarize then: Once the diagnosis of poliomyelitis is made, preparations should be made to treat the patient at home or in the local hospital. During the acute stage he should be allowed to rest but frequently checked for respiratory involvement. If evidence of this occurs, dehydrating measures should be employed. Oxygen must be available. If further difficulty in breathing

occurs and is not of bulbar origin, then a respirator should be brought to the patient's bedside and used if symptoms of anoxia appear. The local chapters of the National Foundation for Infantile Paralysis are acquainted with the location of respirators and can supply them on a few hours' notice. Only after the acute phase of the disease has passed is the patient ready for physiotherapy at one of the three Alabama centers, if it is not available locally.

125 South Union Street.

Habits of Medical Care—Who among us physicians has not been inclined to say to a patient, "Why did you not come to see me sooner when we could treat you easier and with more chance of cure?" Who among us has not wished with all his heart that some means could be found to lessen these tragedies by teaching patients better habits of preventive medical care? We support the efforts of special groups to establish programs for the early detection of this or that disease. We may cherish the hope that some good will come from the programs for multiphasic physical examinations which seek to unite all of these scattered efforts but as physicians we know only too well that people can not be compelled to be more healthy in spite of themselves. Some of the infectious diseases have been almost completely eliminated but this has been accomplished where preventive measures can be applied without depending on the day by day cooperation of the individual citizen. In spite of the program of annual physical examinations which the medical profession has been advocating for many years, it appears that it is necessary to frighten most people to get them to submit to a regular examination. The reasons why persons fail to come early in the course of chronic disease have been diligently studied in recent years but never with more perspicacity and appreciation of the human factors involved than by King and Leach as reported in *Cancer*, April 1951. These authors, in a study of 329 patients at the Memorial Center for Cancer and Allied Diseases, were able to draw certain conclusions, some of which we could have surmised and some appear to be a real contribution to our knowledge.

It might be supposed that those who are habitually provident about most aspects of living would be found to be foresighted about preventive medical care. This was the case. It will come as a surprise to those who would socialize medical care to learn that "in the correlation between medical care habits and economic status, no relationship could be found although attitudes toward spending money were important." Poverty as such does not cause the delay.—*Editorial, Connecticut M. J., June '51.*

MANAGEMENT OF DEAFNESS

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The management of the deaf patient looms up as an important consideration when one realizes that there are ten million hard of hearing people in the United States. It was recently estimated that about one in a hundred people have some hearing disorder.

These people are under a definite handicap economically and, unlike most of the visually impaired, cannot be brought up to practical acuity as in the case of fitting a pair of eyeglasses; hearing aids are not accepted with such ease and graciousness. The vast majority of people resent hearing aids, and come to them as a last resort.

The ideal set-up in a community as a first step to the prevention of deafness is a Hearing Center headed by competent otologists. The value of such a Center cannot be overestimated.

From an investigative or therapeutic standpoint, patients may be sent by private physicians or public organizations paying what they can, if anything. Clinics as a rule cooperate with all health societies in the community.

The routine of a Hearing Center is as follows: (1) A complete physical examination is made and a history taken on each applicant. (2) A complete auditory history is taken. (3) A complete ear, nose and throat examination is made; and (4) Exhaustive hearing tests are carried out, including tuning fork, audiometer, and voice tests.

When all the elements of the investigation have been completed, each case is evaluated and treatment is recommended.

The management of deafness starts in childhood, when it is first suspected, and this cannot be overemphasized. A good many hard of hearing children are dismissed as unattentive or stupid until it is too late to help them.

A child should be given specially devised hearing tests to determine the deafness present. If it is ascertained that the subject is deaf, every attempt should be made immediately to remedy every physical defect having a bearing upon it. It is also wise at

this time to start lip training in case the deafness progresses. The psychic element of the child should be taken into consideration. For example, a deaf child should never be left in a completely dark room at night, since this shuts him out of contact with his environment; a small light should be left in the bedroom until an advanced age when the child is reassured.

Repeated attacks of otitis media are the forerunner of eighth nerve destruction. Appropriate care, such as tonsillectomy, local treatments and hearing tests, should be unremittingly instituted.

As the child progresses into adolescence after adequate care and is still deaf, the eustachian tubes should be investigated, since a great deal of lymphoid obstruction, even after adenoidectomy, is frequently found. This can be best remedied by radium applications after the manner of Crowe.

Intensive vitamin therapy is advocated by some otologists at this point, if there is not too much nerve destruction, especially in the higher frequencies.

Going further into young adulthood, the differential diagnosis must be made as to whether it is an obstructive, perceptive or otosclerotic deafness. In this last group most help can be looked for in the otosclerotics through the fenestration operation, the advent of which has been a monumental advance in otology. It is gratifying to note that occurrences of destructive mastoiditis and its sequelae are few, due to the antibiotics. It is rare now to see a case of acute mastoiditis.

The biochemicals, however, have not had any appreciably favorable effect on the chronic suppurative type of ear. Here radical surgery must be resorted to. It is also interesting to note that in order to preserve as much hearing as possible the old radical mastoid operations have been modified to suit individual cases. As much anatomy is preserved as possible in the newer techniques, and the approach through the endaural route lessens postoperative recovery to 3 or 4 days.

In the young the condition of serous or secretory otitis has not received sufficient attention. This condition may lead to attic perforations and cholesteomata, severely hampering hearing. Otitis media with effusion is quite common in children and often overlooked due to lack of symptoms. Hence it is left to result in deafness in later years. With our present knowledge we are aware that these cases usually have an allergic basis and can be managed by attention to this factor. The child's eustachian tube is horizontal and fluids should never be ingested in the recumbent position for fear of forcing liquids into the upper pharynx, thence to the middle ear.

Simulated deafness from Meniere's disease must be differentiated early. This is due solely to endolymphatic changes in the labyrinth, causing deafness by actual damage to the cochlea, and may not happen for years. The differential symptoms attending this temporary deafness are vertigo and tinnitus. Early use of peripheral vasodilators will restore hearing to some extent. It is felt by some authorities that this condition, also, is related to an allergy affecting the internal auditory artery.

Traumatic nerve (perceptive) deafness is on the increase and industrial firms are now taking steps toward alleviating the excessive noises of their operations. Some require audiograms before employment. Noise prevention programs are in force in many factories.

Since the War, from which came a large number of conversion hysterics, we find cases of functional or psychogenic deafness. Here again it is important for the Hearing Center to segregate such cases.

The modern hearing aid is developed to such a high level of efficiency these days that it is no longer a "squawk box." Patients have told me they hear better with a modern aid than they did fifteen years ago, although their speech loss by test had dropped 20 to 30 per cent. The hearing aid is especially suited to cases of mixed deafness. The difficult cases to fit are those of traumatic and severe nerve deafness. Sometimes a small ear trumpet is better in these patients.

For the severely handicapped the hearing aid is of little value and it is in this group

that a Hearing Center and a Rehabilitation Clinic do the greatest service. Lip reading and auditory training are here of the greatest aid.

In children of preschool age who are deaf, valuable aid can be given by a Hearing Center in diagnosing functional or psychogenic deafness and in training for use of aids.

What is to be done about the routine deaf office patient? Certainly it is inadvisable not to tell them nothing can be done. The worst thing that can happen to this group is to be given a short insufficient examination. They should have a complete auditory examination, with tuning fork and speech tests, for proper evaluation.

The deafened patient will grasp at any straw, hence the large array of empirical treatments they have undergone to no avail in the last decade. He should be warned concerning these nostrums.

All hard of hearing people are sensitive and have a slight inferiority complex, with a tendency to withdraw from the world. At times an improvement of hearing will be noticed under one of the recent new therapies but in reality it is due to the fact that the patient is paying better attention while under this new "miracle treatment."

Otologists have a responsibility toward the deafened far greater than mere diagnosis. If the patient cannot be helped by surgery or medicine, he should not be dismissed abruptly. The problem should be diplomatically discussed with the patient and psychotherapy put into play. Discuss their case with them frankly, and tell them exactly how they stand as to a hearing aid versus further treatment. Never be discouraging but beware of being too sympathetic; that is what they want. Never tell them that their hearing will be worse or they will be totally deaf. Impress on them the importance of economic and social adjustments. Teach them to accept their handicap and act accordingly.

The history of the field of tuberculosis, as a branch of medicine, has been an unfortunate one of isolation from the rest of medicine, engendered by geographic, climatic and even philosophic principles now clearly recognized as outmoded. It is time for the general physician and the lay worker to meet with the specialist in pulmonary diseases and in tuberculosis, for the more effective control of tuberculosis.—*Hoosier Health Herald*, William B. Tucker, M. D., March '51.

RENAL FAILURE IN PATIENTS TREATED WITH SALT FREE DIETS

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and

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There has been described recently an unfortunate syndrome which is often associated with salt depletion therapy.¹ This complex is characterized by drowsiness, weakness and lethargy, anorexia, nausea, and occasionally abdominal and muscular cramps. As a part of this, during or before development of other symptoms, there occurs progressive renal failure, as evidenced by an increasing depression of urinary output. It has been shown that depletion of the salt content of the extracellular fluid is associated with decreased glomerular flow and that this alteration in renal dynamics results in nitrogen retention.² The development of this form of uremia is more likely to occur in patients who have underlying renal damage.

This syndrome has been reported from several sources. Soloff and Zatzuchni described patients who developed uremia and died while using a salt free diet for hypertension.³ MacGuire reports similar complications in cases which had been subjected to prolonged salt depletion.⁴ Schroeder also has described patients who developed nitrogen retention while subjected to salt depletion procedures.¹ A number of deaths were reported. Apparently, rigid salt restriction is not always the innocuous procedure once assumed. It may be disastrous.

From the Department of Medicine of the Medical College of Alabama.

This work was supported in part by a research grant from the Irwin, Neisler Company, Decatur, Ill.

1. Schroeder, H. A.: Renal Failure Associated with Low Extracellular Sodium Chloride, *J. A. M. A.* 141: 117-124 (Sept. 10) '49.

2. Chasis, H.; Goldring, W.; Breed, E.; Baloney, A., and Smith, H. W.: Effects of Salt and Protein Restriction on Blood Pressure and Renal Hemodynamics in Hypertensive Patients, *J. Clin. Invest.* 28: 775, July '50.

3. Soloff, L. A., and Zatzuchni, J.: Syndrome of Salt Depletion, *J. A. M. A.* 139, No. 17, April 29, 1949.

4. MacGuire, William B., Jr.: Uremia Due to Sodium Depletion, *J. A. M. A.*, 137, No. 16, Aug. 14, 1948.

We have studied three patients who developed uremia while on salt free dietary regimens for hypertension. In all three cases, the treatment had been continued over a long period and in each there was some evidence of underlying impairment of renal function. Loss of salt through the skin by way of perspiration no doubt contributed to the further depletion of salt, for in each case the onset of hot weather apparently was associated with the production of symptoms. Frequent blood urea nitrogen determinations during the summer months might tell of approaching uremia and thus forestall serious complications. In our series there were no deaths.

REPORT OF CASES

Case I. This 74-year-old white male had been a known hypertensive for nine years and during the twelve months prior to admission he had been treated with salt free diet; during the greater part of this period he had received less than 1 gram of sodium chloride daily. His blood pressure was systolic 210, diastolic 110. His eyegrounds showed only silver wiring, but with marked A-V nicking. There was no evidence of heart failure. The circulation time, arm to tongue, and the venous pressure were within normal limits. A decrease in the volume of urine had been noted for approximately one month before admission. The urine was scanty, and showed a trace of albumin with a normal specific gravity. The blood non-protein-nitrogen was 88 milligrams per cent. The serum sodium was 125 milli-equivalents and the serum chloride 70 milli-equivalents. The carbon dioxide combining power was 15 volumes per cent.

Loss of appetite, nausea, cramps in both legs, and mental confusion had existed for approximately ten days. It was soon recognized that this patient presented a picture of uremia resulting from progressive renal failure.

The patient was given 5 per cent salt solution parenterally, followed by adequate fluids by mouth, and in this manner a total

of 30 grams of sodium chloride was given. Diuresis ensued and the evidences of uremia disappeared.

Case II. This 76-year-old white male was admitted to the hospital with uremia. For eighteen months he had been treated by his family physician for hypertension. In view of the past history of repeated bouts of pyelonephritis it was assumed that an old healed pyelonephritis was a possible cause of the hypertension. An intravenous pyelogram showed changes supporting this diagnosis. His clinical course had been characterized by persistently elevated diastolic pressure.

Treatment during the past year had consisted of a salt free diet, together with sedatives in small amounts. He had apparently improved under this regimen, as his subjective complaints of dizziness and headache disappeared; his blood pressure, however, showed little change, and during the summer months his condition deteriorated rapidly. He complained often of muscle cramps, weakness and nausea. Later, he became disoriented. His physician made a diagnosis of uremia and gave him three intravenous injections each of 1,000 cubic centimeters of 5 per cent glucose in distilled water. There was no apparent improvement. The output of urine was scanty and did not increase on treatment. He was then transferred to the Jefferson-Hillman Hospital.

On admission, in addition to an elevated non-protein-nitrogen in the blood, it was found that the serum sodium was 122 milli-equivalents and the serum chloride was 68 milli-equivalents. There was evidence of acidosis. The peripheral blood showed hemoconcentration and increased viscosity. The urine output during the first twelve hours of hospitalization was 80 cubic centimeters. This urine was highly colored, and had a specific gravity of 1.016. There was a heavy trace of albumin, but no formed elements were seen.

The treatment that followed included intravenous injections of 5 per cent salt solution providing a total of 50 grams of salt. The output of urine improved and all symptoms of uremia disappeared.

Case III. This is the case of a 67-year-old white female who had been known to be hypertensive for a period of eight years. Her blood pressure had been remarkably

well stabilized at 210/98 millimeters of mercury. Her treatment for one year prior to admission had consisted of sedation and a modified rest regimen. She was started on a regimen of salt restriction; the diet carried less than 1 gram of salt per day. For approximately six weeks after beginning the "salt free" diet there was a gradual drop in her systolic pressure. The reading declined to systolic 180 but there was no significant change in the diastolic pressure of approximately 90 millimeters during the entire year of treatment. After about six months she complained of weakness and frequent cramps in the back of her legs; she became apathetic and slovenly in her habits, which had not been noted previously. She complained of nausea with occasional vomiting. Her urine prior to this admission had shown only an occasional trace of albumin and she had noted no decrease in the output. The concentration, however, was markedly decreased, as was evidenced by the low specific gravity.

She entered the hospital in renal failure. Approximately two months after the first symptoms appeared she was disoriented. During the twenty-four hours prior to the institution of therapy the output of urine was less than 500 cc. The non-protein-nitrogen was 110 mg. per cent; the blood sodium was 120 milli-equivalents; and the chloride was 70 milli-equivalents. A carbon dioxide combining power was reported as 20 volumes per cent. A diagnosis of salt depletion syndrome was made and the patient was given sodium chloride intravenously. Following the injection of 500 cc. of 5 per cent salt solution, diuresis began and evidences of uremia rapidly abated.

DISCUSSION

McCance attempted to dissociate the effects of the loss of electrolytes from loss of body water in four human experimental subjects.⁵ He subjected these four persons to prolonged periods of sweating without any limitation of the ingestion of water, while at the same time rigidly restricting the intake of sodium. Studies of the urine showed a fairly normal output in point of volume, but the salt content fell sharply

5. McCance, R. A.: Experimental Sodium Chloride Deficiency in Man, *Proc. Reg. Soc., London* S. B. 119: 245, 1935-1936.

paralleling a decrease in the sodium chloride of the plasma. In face of a plasma salt deficit, the body conserves its sodium chloride and it was for this reason that these experiments had to be continued for three or four days before a significant degree of salt depletion had been reached. The symptoms displayed by these subjects were similar to those with Addison's disease, notably lassitude, apathy, loss of appetite and nausea. The subjects did not complain of thirst. Cramps occurred in the muscles of the fingers, floor of the mouth, and in the chest. Increase in the intake of water failed to produce diuresis.

Marriott estimated that when the plasma volume is reduced by 1 liter the total extracellular loss is 6 to 7 liters.⁶ Moyer reports that a decrease of 2 to 4 per cent of the original body weight caused by the loss of sodium chloride will elaborate such symptoms as apathy, anorexia, somnolence, nausea and vertigo.⁷ Evidently these symptoms were due to some cause other than reduction in blood pressure, because in these patients the blood pressure declined very little. When the loss of extracellular fluid reached to 4 to 6 per cent of the original body weight the symptoms became severe; the blood pressure was low, the pulse rate variable, the tongue wrinkled, the skin sticky, and the muscles were soft and of the consistency of putty. Further reduction of extracellular fluid to $\frac{1}{3}$ to $\frac{1}{2}$ its original volume resulted in coma and death.

The marked lowering in chloride content of blood serum is considered positive evidence of a severe loss of electrolytes in the body fluids; the concentration of urea increases in the blood, but not in the urine. There is a decrease in the glomerular flow, which possibly accounts for this increasing nitrogen retention.² The frequent occurrence of renal disease in hypertensive patients, whether it be primary or secondary, contributes to the production of uremia.

The clinical picture of this deficiency syndrome simulates that of adrenal cortical insufficiency. The symptoms include severe lassitude, apathy, anorexia and nausea.

Thirst is usually not a prominent feature; muscle cramps and abdominal pain may be outstanding symptoms. Cardiac output is decreased, arterial pressure is low, circulation time is prolonged, and peripheral resistance is elevated.⁵ The loss of electrolytes from the extracellular spaces causes the fluid of this compartment to become relatively hypotonic, and, therefore, water does not leave the intracellular space as it does in primary water depletion. If water is administered to such a patient with marked salt deficiency, fluid may then enter the intracellular space and cause swelling.⁵ This, no doubt, accounts for the increasing edema seen in those cases of this syndrome caused by the severe salt diuresis which follows intensive treatment with mercurial diuretics.⁸ In such cases the edema persists or increases notwithstanding the administration of large doses of the diuretic.

Finally, it is logical to assume that the lowering of the blood pressure in salt depletion is dependent at least in part on the decreased cardiac output. This alteration in the cardiac dynamics is no doubt brought about by the change in the extracellular fluid volume of which the blood plasma makes up a large part. The peripheral blood shows hemo-concentration and the plasma proteins may thus be elevated. Peripheral resistance may also be elevated,⁵ which, no doubt, is a physiologic effort to compensate for the decreased cardiac output. Such increase in the peripheral resistance is, however, hurtful in essential hypertension, for, in this disorder, peripheral resistance is already elevated, and any procedure designed to increase this phenomenon would obviously accentuate the difficulties. This leads us to question the safety of long continued periods of rigid salt restriction.

CONCLUSION

Three cases of uremia following salt depletion in the treatment of arterial hypertension have been described. Each of these exhibited evidence of underlying renal damage. From such experiences we would conclude that, when rigidly observed and long continued, the salt free regimen is a hazardous procedure.

6. Marriott, H. L.: Water and Salt Depletion, *Brit. M. J.* 1: 246 and 328, 1947.

7. Moyer, C. A.: Fluid and Electrolyte Balance, *Surg., Gynec. and Obst.* 84: 586, 1947.

8. Holley, H. L., and McLester, J. S.: Unpublished data.

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X-RAY—A PAIN KILLER IN CANCER

The value of x-ray and radium treatment in relieving pain in advanced cancer is one of the great triumphs in medical progress, according to Dr. Bernard Pierre Widmann, Philadelphia, who discussed the subject in the May issue of the American Journal of Roentgenology and Radium Therapy.

He said that if x-rays and radium were to be acknowledged as of no actual value beyond ordinary pain-killing benefits "then these agents of irradiation for advanced cancer should be considered as having achieved and earned their rightful place in the therapeutic armamentarium of medical progress and science."

Doctor Widmann, who is president of the American Roentgen Ray Society, said that since more than 50 per cent of the cancer cases must be classified as "advanced," these cases "must receive some help as against the alternative of doing nothing."

He said in his article that it was distressing to see the futility of any kind of treatment for many of the advanced diseases, such as heart, arthritis, metabolic, tuberculous and neuropsychiatric, as well as others. "This hopeful situation," he said, "is accepted by many physicians as well as patients with complacency and even optimism. Irradiation, on the other hand, can maintain an individual, with hopeless cancer, comfortable and ambulatory for indefinite periods of time—as much as several years or more.

"Pain-killing benefits of irradiation are determined, not by tables and statistics, not by estimates of increased longevity cycles, but an improvement in health and strength, gain in weight, relief of pain and discomfort, regression and healing of ulcerations which may be large and ugly, by lessening or completely controlling hemorrhage, and very often by the prolongation of life, as well as many other well known benefits.

"Even though life is not prolonged in many instances, the improved well-being and the relief of pain are a satisfaction and comfort which cannot be equaled in the management of many other hopeless diseases."

Doctor Widmann said that so far as pain-killing effect is concerned, the treatment

must be individualized. "Each patient," he said, "is a problem according to age, physical condition, and extent of involvement. Marked differences in radiation treatment for tumors of identical sites will occur."

"X-ray and radium treatment," he cautioned, however, "must never be considered as a substitute for surgery which is still the outstanding proved method of effecting a cure of the so-called 'deep-seated' cancers—notably of the brain, lung, gastrointestinal and urinary tract regions.

"Progress in radiation therapy is not retarded or overshadowed by the great advances and successes of surgery. Neither surgery nor irradiation is the final answer to the cancer problem, but thousands of cures and marvelous pain-killing benefits by surgery and irradiation are monumental records of medical achievements."

TREATMENT OF CORONARY ARTERY DISEASE

"The treatment of any disease is most successful when the cause can be removed. Even though this objective cannot be reached in patients with coronary disease, much can be done for them, and these therapeutic measures will be considered in this communication.

"The treatment of coronary disease depends on whether the presenting clinical picture is: (1) that of recurrent pain of short duration without myocardial necrosis, or (2) that of more prolonged pain with necrosis (myocardial infarction).

"The psychologic management of any type of heart disease is of utmost importance. The patient usually knows only what he hears from his lay friends and what he reads in the newspapers. He, therefore, is very likely to have a distorted viewpoint because his familiarity with heart disease is largely confined to fatal instances. He does not know that many patients, including even those with serious heart disease, survive for years or even decades. Much anxiety can be overcome by careful explanation of the significance or often the insignificance of the findings. The importance of tact, sympathy and understanding for the patient with coronary artery disease cannot be over-emphasized."

Thus do Viar and Harrison¹ begin their excellent discussion of this ever-present and increasingly prevalent entity. The Birmingham investigators tell us that "There is no evidence that physical activity below the threshold of pain production has any harmful effects on the patient with angina pectoris. There is some evidence that it may even be beneficial, in that it tends to increase collateral coronary circulation. A short, slow walk once or twice a day, after taking a nitroglycerin tablet, often seems to produce gradual improvement. The length of the walk should be increased slowly, as exercise tolerance increases. There is no reason why such a patient should not hunt or fish if these activities do not produce pain. In many cases he is able to do this often without experiencing any discomfort, whereas a tense business conference quickly induces a seizure. Furthermore, there is a psychological advantage in the exercise, as it tends to bring back the patient's confidence in himself.

"The physician need not offer precise directions concerning physical exercise because one cannot predict the patient's tolerance in different situations. The best method is to tell the patient not to do the things which cause him to have pain. Other than this, he may do anything he likes. He has probably learned by experience what does or does not give him pain."

And the authors also tell us that the patient should take nitroglycerin during a seizure of pain, of course. And they add that "Nitroglycerin should be used prophylactically in order to prevent attacks when situations arise that are likely to lead to seizures. Common examples are: shaving or dressing in the morning, attending a business conference, delivering a speech before a jury. . . "

We are told that the use of nitroglycerin to promote collateral circulation is not widely practiced, but appears to be logical. Viar and Harrison say that many patients appear to improve when they take a short walk twice daily, each walk being preceded by a nitroglycerin tablet.

We also read that "When compared to nitroglycerin, other drugs seem to have little place in the treatment of angina. Amyl

1. Viar, William N., and Harrison, Tinsley R.: Treatment of Coronary Artery Disease, South. M. J. 44: 424, May 1951.

nitrate acts more quickly but since it is used by inhalation the dose cannot be readily controlled. Papaverine and the various derivatives of theobromine and of theophylline have been extensively used, but improvement is rarely striking. Khellin appears to have a definitely beneficial effect in many patients but often induces nausea and there is no evidence that it has advantages over the frequent administration of nitroglycerin. Interruption of the upper four dorsal nerve roots bilaterally by operation or by injection of alcohol into the corresponding sympathetic ganglia will abolish the pain, but is only rarely necessary. These procedures should be limited to patients with severe and more or less intractable pain."

As for the treatment of myocardial infarction, the Birmingham clinicians state that "In the acute stage complete rest, both physical and mental, is mandatory. Of first importance also is the relief of pain. This is best obtained by the administration of opiates as often as may be necessary for the purpose. If there is any appreciable degree of circulatory collapse, morphine should be given intravenously in doses of 10 to 15 mg. (1/6 to 1/4 grain). If administered subcutaneously it may not be readily absorbed.

"It is only in the last few years that the importance of oxygen has been fully realized. A certain number of patients will experience marked diminution of pain from oxygen alone. If there are rales at the lung bases, or if cyanosis is present, oxygen is urgently needed. Even in the absence of these obvious indications, oxygen may be beneficial, although the mechanism of its action is not entirely clear."

And we are informed that "The available evidence seems to substantiate the fact that anticoagulants are a valuable part of the treatment of myocardial infarction from the very beginning."

Viar and Harrison say "The previous idea as to the desirability of prolonged rigid bed rest is being abandoned. The present tendency is to have the patient remain in bed (except for bowel movements) for a two to three-week period, and then to be out of bed in a chair and to walk slowly around the room after the third or fourth week. It is the consensus that an older person should

be restricted to complete bed rest for a shorter period of time than the younger person, because of the greater likelihood of development of phlebothrombosis and infection in the former.

"During the convalescent period, stair climbing should be avoided and the patient allowed gradually increasing activity, in terms of walking in the house. The duration of this period will vary according to the circumstances. The available evidence, which is quite incomplete, would suggest that there is every advantage in prolonged restriction of activity, but little to be gained by prolonged rigid rest in bed."

As coronary artery disease is encountered more and more often, it behooves all who must deal with it to render the best treatment possible. Viar and Harrison have given a splendid discussion of this subject and have certainly taken a sound and rational attitude as to what constitutes proper and adequate therapy. Practitioners will do well to heed their excellent admonitions.

VOLUNTARY INSURANCE SUPERIOR

In the opinion of Lowell S. Goin, M. D., of Los Angeles, "voluntary health insurance, if given the opportunity to do so, untrammelled by governmental regulation and bureaucratic red tape, will give to the American people more medical care, and better medical care, than can ever be furnished by politically managed compulsory plans."

His statement was contained in a recent issue of *Radiology*, a journal which is published primarily for physicians who specialize in x-ray diagnosis and treatment. It is published by the Radiological Society of North America.

"And, moreover," Doctor Goin said, "voluntary health insurance will do the job in the American tradition, without the suppression of part of our freedom, and without offense to our American dignity. That its growth has been slow is to be expected . . . Voluntary plans are being developed slowly, although as rapidly as may be—nearly 70 are now in existence in 30 states—on sound actuarial bases, by men who know that the complex and vexing problems of medical care are not to be solved by writing words and making them into laws."

Doctor Goin questioned whether the protection of the health of the American people is a natural function of government.

"The best government," he said, "is that which governs least, and all history persuades us that freedom is smothered by increasing government paternalism."

The Los Angeles doctor said that voluntary health insurance plans are definitely doing the job of taking care of medical and surgical needs of the American people.

"These plans are doing it, and with a considerable degree of success."

"The reformer," he adds, "argues that a relatively small number of people are now cared for by voluntary plans, ignoring the plain fact that we are caring for none by Federal compulsory plans. It is easy and natural to ignore, or to attempt to ignore, an unpleasant truth, and hence no reference is made to the fact that millions of Americans are now providing themselves with prepaid medical and hospital care by means of voluntary plans, and that the only actuarial knowledge available concerning health insurance concerns such plans.

"No one knows what the cost of compulsory health insurance will be, and estimates vary widely. The costs of voluntary prepayment plans are known, and, as experience develops, the costs may be reduced, the service expanded, or both changes may be effected. Any changes in a compulsory plan, once one is established by law, will be made with great difficulty, as the most casual perusal of the daily paper will indicate."

Doctor Goin discussed many of the benefits offered by the nearly 70 voluntary plans which are now in effect.

"These plans," he said, "offer their insured the opportunity to select the doctor of their choice, to go to the hospital which is preferred and, in general, to receive medical care of like quality and under the conditions to which they are accustomed. No administrative officer intervenes; no permits are needed; the relationship between the doctor and patient remains the personal and confidential one of the past. No panels are formed; no one's permission is needed to choose a doctor if the patient is dissatisfied. That compulsory sickness insurance can or will permit these freedoms is simply not true, as anyone can persuade himself by reading the bill."

"Another argument," he said in his article,

"is that people just can't afford to pay for medical care. Medical and hospital bills are troublesome. So are rent and grocery bills, and the payments on the family automobile. How difficult is it? The fact is that the American people can pay for medical care if they only are willing to assign it a sufficiently high priority in their budgeting. Last year they spent about three billions for medical care and hospitalization, including money spent for patent medicines and for cults. They also spent nearly four billion dollars for tobacco; 9.4 billion dollars for movies and other entertainment; 9.6 billion dollars for alcoholic beverages. The people have decided the priority they assign to the costs of medical care."

Long Continued Cortisone—With the uninterrupted administration of cortisone acetate it has been possible to preserve satisfactory improvement for periods of six to 15 months in approximately two-thirds of cases initially started on treatment. Major degrees of suppression could not be supported in the remaining one-third of cases for several reasons. The most common detriment to good antirheumatic effect was the intervention of objectionable hormonal side effects; their appearance often necessitated lowering of the dosage to levels insufficient to uphold adequate clinical improvement. A few patients had gradual deterioration of improvement, and eventual refractoriness to the drug developed in two patients. Despite large suppressive doses of the hormone, effective response could not be established in some cases. However, massive doses (150-200 mg. per day) of cortisone for long periods were not used even in resistant cases, as in the author's experience such amounts have almost invariably led to the development of troublesome signs of hormonal excess. The author's attitude in regard to dosage for long-continued treatment with cortisone has been as follows: to employ amounts short of serious hormonal side reactions; to continue therapy if the arthritis can be satisfactorily controlled with safe doses—if not, to stop administration unless the patient is content with a minor degree of improvement.

Unfortunately, the poorest results, percentage-wise, have been in the more severe cases of rheumatoid arthritis in which relief was most needed. Actually less than one-half of the original group of cases graded as severe have remained well-controlled for long periods. The failures in this group have been due principally to the fact that large doses of the hormone are required for satisfactory control and often it is not possible to give such doses without provoking signs of hypercortisonism; frequently a compromise between good antirheumatic effect and safety of administration must be made.—*Boland and Headley, California Med., June '51.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE CRUSADER

W. A. Dozier, Jr.

Director of Public Relations

Not too long ago a young friend of mine, fourteen years of age, came home and announced excitedly to his mother, "Mama, I was elected Secretary of the Allied Youth!"

"That's fine, Son," said his mother. "What is the Allied Youth?"

"Oh, Mama! We fight cigarettes and liquor and everything else that's bad."

After hearing of this conversation, I knew I was in for a lecture. And not too long thereafter I was properly called on the carpet because I smoke cigarettes. After having been told how much I was losing financially, what harmful effects nicotine has on the human body—this with a statement of the exact amount of nicotine gotten from each cigarette smoked—and how smoking coupled with drinking could, according to a cartoon, lead a person to destruction, I calmly asked, "What would you say if I told you that I was told to smoke by my family doctor?"

"Then I would say that he was wrong," was his immediate reply.

Of course I was thoroughly enjoying the conversation and perhaps laughing up my sleeve a bit at the overexuberance of youth. However, after the kid had gone on to more immediate matters, I began to reflect on the conversation. Several lessons can be drawn from what happened in the above incident. First, a crusader usually is, and I suppose must be, completely dogmatic. There is no in between; everything is black or white. "I have a book that says" or "I am convinced" are stock phrases. Those phrases or those ideas are not, within themselves, erroneous; but once they preclude everything else and any new thoughts, they do become harmful to the person and to the cause for which he fights.

The kid of fourteen was not so different from the rest of us. It is not possible ever

to have all the facts. Still we must make decisions; that is how life goes. But we must be careful not to become dogmatic and refuse to accept new facts when they arise. Each new fact must be tested; and when tried and found true, it must be accepted. At that point a reevaluation must be made to see what effects there are on the over-all picture.

Like the kid of fourteen, most of us are too quick to say someone is wrong if that person does not agree with what we think. Usually we reach such a conclusion without ever learning, or even trying to learn, why the other person feels the way he does. I was not asked by my friend why I had been told to smoke. Instead, the immediate reaction was that he, the physician, was wrong. There were no extenuating circumstances. The matter was closed as incorrect because some idea did not agree with a preconceived notion. How easy it is for us to do just this in our thinking!

The above few paragraphs may sound to some people like a plea for weakness, indecision, vacillation, or appeasement. Far from it. Opposing the above remarks is the necessity for courage of one's convictions, tenacity, strength, and good, old-fashioned stick-ability. Once you have all the facts at hand, that is all available facts, you must make a decision and be willing to fight for this belief. However, whenever new factors arise, they must be taken into consideration; and their effects must become an integral part of the picture. The only thing that the above paragraphs make a plea for is open-mindedness. One's fervent prayer might well be, "Dear God don't let me become narrow-minded or dogmatic."

For a sick man or woman disease is an acutely personal problem, but it is also a communal problem. And if the public is to cooperate with the medical profession in the treatment of disease in the individual it will, we believe, be able to do this more intelligently if it has some idea of the size of the problem to the nation at large. Tuberculosis is an obvious example.—*Brit. M. J.*, March 17, '51.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

GREATER HAPPINESS THROUGH MENTAL HEALTH

For a long, long time our physicians and public health agencies were especially concerned with the great killers. There was nothing wrong with that. For it was proper and logical that the limited facilities available be used against those forms of illness that caused the largest number of deaths. But, in recent years, there has been a decided shift of emphasis; other diseases are now coming in for more and more attention. Our health generals are leveling more and more artillery upon those disease enemies that impoverish, as well as those that kill. They are mapping strategy against those that make people slow of movement, as well as those that create invalids. They are thinking in terms of general well-being, as well as regular physical health.

The increasing interest in mental hygiene—mental health is a better term—is entirely in line with this newer trend. For the manifold illnesses of the mind and emotions have little, if any, direct effect upon the death rate. (However, they may affect them indirectly, as we shall see.) The mentally sick probably live as long as the mentally well. But mental health is a great health problem, nevertheless. It fully deserves the increased attention it is receiving.

There are many aspects to this problem, of course. One of them is the old idea that mental illness is something to be embarrassed about. We—practically all of us—have long been most unkind in our attitude toward unfortunates generally. It was not until comparatively recently that the crippled child stopped being singled out for frequent taunts and insults from his playmates. Victims of certain diseases, from tuberculosis to cancer, were treated virtually as social outcasts. The deafened, or partially deafened, were long reluctant to wear the hearing aids that conspicuously set them

apart from those with normal hearing. Even wearers of eye glasses felt conspicuous and self-conscious. Youngsters who do not live in certain favored neighborhoods are still reminded by cruelly unthinking playmates that there is a prejudice against them for that reason. And the mentally sick still have particular reason to feel the keen lash of the calculated slur. Nor is such embarrassment confined to them. Their families, and even their friends, also suffer under its cutting and cruel blows.

That is surprising when we consider how many people are victims of various kinds of mental diseases. Dr. Luther E. Woodward, of New York City, is one of a large number of authorities who have reminded us of this unhappy fact. At a joint meeting of the Michigan Welfare League and the Michigan Society for Mental Hygiene, in Detroit, he pointed out that some 700,000 Americans were then receiving institutional treatment for what a newspaper writer called "mental diseases, mental defects or epilepsy." That total, he emphasized, represented more than half of all the hospital patients in the country. Moreover, we are reminded by this same authority, one person out of every ten becomes incapacitated at some time during his or her lifetime as a result of—and again I quote from a newspaper account of the meeting—"psychosis, psychoneurosis or neurotic condition."

Dr. Woodward, who was then serving as a consultant of the National Committee for Mental Hygiene, urged that certain things be done to reduce the heartbreak which mental illness brings. He spoke of early discovery and diagnosis as especially important. These, he declared, depend upon the alertness of men and women in several fields. He mentioned especially doctors, ministers, social workers, industrial physicians, nurses and the families of potential mental disease victims. He continued:

"Rehabilitation of the mentally handicapped will be achieved only if all the professional groups and rank and file citizens appreciate the need for such service and take steps to insure legislation, appropriation of public funds, and support of

voluntary agencies so that adequate staff and materials are provided for all phases of the program."

That New York Mental health authority went on:

"A mental hygiene education program for all people is needed if communities are to make good on their responsibilities to find those who need help, to provide effective treatment for them and to follow up with services needed to complete their recovery."

Unfortunately, Dr. Woodward's estimate of 700,000 mentally sick hospital patients tells only part of the story. Actually, the part it tells is only a small fraction of the whole. For, remember, victims of any disease who receive hospital treatment are, generally speaking, only the most serious cases. For every hospitalized influenza patient, for example, there are many who carry on their bouts with the influenza germs at home. There are many times as many heart disease victims out of hospitals as there are in hospitals. And the same is true of victims of mental illness. How true that is has been emphasized by another authority in this field. Professor Esther Lloyd Jones, head of the guidance laboratory of Columbia University's Teacher's College, estimated some time ago that 30,000,000 or more Americans are in need of various forms of mental hygiene treatment. She placed a large share of the blame for this condition upon the nation's educational institutions. For, she pointed out, practically all of these were at one time or another students in schools and colleges. (No doubt many will question the validity of this placing of the blame.)

What is mental health?

Here is what the National Committee for Mental Hygiene once said by way of definition: It defined mental hygiene as "the science and practice of attaining and maintaining soundness and vigor of mind." It is "more than the absence of disease." It "consists of the ability to live with other people happily, productively and acceptably." Moreover (and here again I am quoting a spokesman for the National Committee for Mental Hygiene): "Mental health is the ability of one human being to live with other human beings in whatever situation he may be placed without having to sacrifice his own happiness or destroy that of those around him. It consists in what a person does, what he thinks and feels, what things

mean to him, and how he behaves in regard to life and death, joy and sorrow, shame and praise, love and hate and fear. Therefore, mental health is a state of well-being—a subject which deals with all groups in a community; children and adults, the well-to-do and the less fortunate, Protestant, Catholic, Jew or Mormon, urbanite, suburbanite and ruralite."

In its broadest sense, mental health means proper adjustment to one's mode of life. It, of course, covers a vastly larger field than insanity. Its broad sweep includes a child who cannot get along with his playmates as well as a raving maniac. A mentally unwell person may be a supervisor who constantly gets on the nerves of his or her workers, as well as a violent hater of humanity.

Various forces play in the sometimes-grim game of mental health, and particularly mental disease. A list of the most important, as he saw them, was prepared some time ago by Dr. O. Spurgeon English, of the Department of Psychiatry of the Temple University School of Medicine. As published in *Archives of Dermatology and Syphilology*, it included: a need for love, approval and recognition; anxiety (mainly worry and fear), hostility, feeling of inferiority, mixed feelings of hate and love (what specialists call "ambivalence"), guilt, ambition, and envy.

The craving to be loved, according to Dr. English, is "one of humanity's greatest hungers." Not only is it important of and for itself: a number of other emotions depend upon it. In an article in the already-mentioned publication, he says:

"From the cradle to the grave human beings struggle under it. Some of them have a great hunger for love but either have no recognition of what they need or have no techniques for obtaining it.

"Lack of it brings such untoward emotions as frustration, hurt pride, envy and jealousy. There has been a general reluctance to accept the proposition that love is an actual necessity for health and happiness. As a health factor it has not had the same scientific standing as the chemical symbol for iron, for example, but the more one studies man and his various illnesses, the clearer it becomes that he can live neither a healthy nor a wholesome life without it."

Anxiety is likewise one of the primary human emotions, primitive and basic. The human race has known it a long, long time. Individuals learn it, and suffer its cancerous

pangs, among their first conscious experiences. It expresses itself consciously in fear. But its roots are set deep inside the unconscious. Let us turn again to Dr. English:

“People who in the ordinary course of life suffer from too much anxiety are people who in early life lacked a consistent supply of reassuring friendly presence or who were subjected to too many real pain-inflicting experiences or threats of them. This allows a dread or worry pattern to construct itself.

“Not only does anxiety impair one’s ability to enjoy life, but it has more far-reaching effects. If one’s energy is used up in concentrating on the feared thing, too little energy is left for happy living. If this phenomenon goes on long enough and severely enough, the body can no longer function properly and symptoms of illness have arrived.”

Hostility has this important thing in common with the need for love: It is widespread. And, while a small amount of it may be regarded as normal, there is serious emotional danger whenever and wherever it exists in large amounts. It may express itself in outbursts of temper. It may show up in the playroom fights that occasionally mar youthful friendships. But it may take other and more serious forms. Dr. English tells us:

“We discover that it (hostility) goes in several directions to produce disturbances of the upper and lower gastrointestinal tract and headache, tic-like movements (twitching), probably epilepsy and disorder of the skin, and plays a role in high blood pressure and other disorders.”

Like other observers of present-day emotional trends, Dr. English has become concerned over the prevailing emphasis upon financial and social success. It is all right to be successful, he tells us. But often the price of success is far too great. For success is usually the fruit of ambition. And ambition often involves envy, jealousy and hard driving of one’s body and mind. As Dr. English reminds us, “The ambitious person does not necessarily have pathologic emotions, but he certainly runs the risk of being infected with envy or excessive competitiveness.” And these emotions “tend to produce tension, and professional, financial and social success of many people has been paid for at a high price, the price of tension, which is prone to express itself through the nervous system on many parts of the body.”

It is evident, therefore, that disturbed emotions play a part in physical, as well as

mental, health. That is all the more reason why mental health needs to have an important part in our general health program.

You will be glad to know that your public health agencies are fully alert to its new importance. The U. S. Public Health Service a few years ago launched a special organization to deal with mental health. Congress has provided substantial sums for research at the national level and for grants to the states for mental health activities among their own people. Greatly assisted by its share of the Federal grant, the Alabama State Department of Health organized its Division of Mental Hygiene a few years ago. Working with welfare agencies, the medical profession, the hospitals and other groups, it is doing much to lift the veil of mental sickness in this state. The task is indeed a gigantic one. But notable progress is being made.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

February 1951

Examinations for diphtheria bacilli and Vincent's	285
Agglutination tests (typhoid, Brill's and undulant fever)	837
Typhoid cultures (blood, feces and urine)	369
Examinations for malaria	145
Examinations for intestinal parasites	3,474
Serologic tests for syphilis (blood and spinal fluid)	22,346
Darkfield examinations	2
Examinations for gonococci	1,726
Examinations for tubercle bacilli	3,380
Examinations for meningococci	3
Examinations for Negri bodies (microscopic)	116
Water examinations	1,216
Milk and dairy products examinations	4,038
Miscellaneous	695
Total	38,632

* * *

March 1951

Examinations for diphtheria bacilli and Vincent's	208
Agglutination tests (typhoid, Brill's and undulant fever)	994
Typhoid cultures (blood, feces and urine)	355
Examinations for malaria	187
Examinations for intestinal parasites	3,921
Serologic tests for syphilis (blood and spinal fluid)	24,577
Darkfield examinations	7

Examinations for gonococci	1,795
Examinations for tubercle bacilli	3,646
Examinations for meningococci	4
Examinations for Negri bodies (microscopic)	129
Water examinations	1,403
Milk and dairy products examinations	4,329
Miscellaneous	1,006
Brucella cultures	11
Total	42,572

* * *

April 1951

Examinations for diphtheria bacilli and Vincent's	178
Agglutination tests (typhoid, Brill's and undulant fever)	1,001
Typhoid cultures (blood, feces and urine)	472
Examinations for malaria	243
Examinations for intestinal parasites	3,219
Serologic tests for syphilis (blood and spinal fluid)	22,945
Darkfield examinations	2
Examinations for gonococci	1,687
Examinations for tubercle bacilli	3,564
Examinations for Negri bodies (microscopic)	122
Water examinations	1,418
Milk and dairy products examinations	4,077
Miscellaneous	904
Brucella cultures	25
Total	39,857

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1951

	Feb.	March	E. E.* March
Typhoid and paratyphoid	1	4	4
Undulant fever	5	4	5
Meningitis	20	17	16
Scarlet fever	43	41	73
Whooping cough	94	102	96
Diphtheria	26	14	21
Tetanus	2	4	2
Tuberculosis	342	305	226
Tularemia	2	1	2
Amebic dysentery	2	7	1
Malaria	0	16	44
Influenza	4395	5022	939
Smallpox	0	0	0
Measles	116	296	731
Poliomyelitis	7	9	2
Encephalitis	2	2	0
Chickenpox	510	452	251
Typhus	3	0	11
Mumps	288	294	222
Cancer	316	357	203
Pellagra	0	6	2
Pneumonia	352	413	432
Syphilis	219	487	1307
Chancroid	5	9	13
Gonorrhea	226	279	574
Rabies—Human cases	0	0	0
Positive animal heads	19	29	0

	March	April	E. E.* April
Typhoid and paratyphoid	4	8	5
Undulant fever	4	5	1
Meningitis	17	8	16
Scarlet fever	41	27	64
Whooping cough	102	148	126
Diphtheria	14	10	21
Tetanus	4	1	3
Tuberculosis	305	181	249
Tularemia	1	0	1
Amebic dysentery	7	6	3
Malaria	16	3	55
Influenza	5022	2394	741
Smallpox	0	0	0
Measles	296	486	834
Poliomyelitis	9	7	2
Encephalitis	2	2	1
Chickenpox	452	274	182
Typhus	0	2	12
Mumps	294	226	229
Cancer	357	338	210
Pellagra	6	0	2
Pneumonia	413	359	234
Syphilis	487	279	1365
Chancroid	9	13	18
Gonorrhea	279	223	488
Rabies—Human cases	0	0	0
Positive animal heads	29	24	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Atomic Weapons Effects—As the result of the explosion of an atomic bomb, four different types of nuclear radiations are produced: gamma rays, neutrons, beta particles, and alpha particles. In an air burst bomb only the gamma rays and neutrons need be considered, since the range of the beta and alpha particles is extremely limited. In actual practice even the neutrons can be neglected, since their effective range in the open is only about one half that of the gamma rays. They would only be important under conditions where heavy gamma ray shielding was available and neutron shielding was absent. In an air burst the gamma radiation exposure occurs only in the first few seconds, since the fission products, which are the source of lingering radiation, are all carried high in the air by the bomb cloud. By the time these fission products have fallen back to the earth, radioactive decay and dilution due to atmospheric diffusion have been so great that no hazard would normally be produced on the ground. At Hiroshima and Nagasaki one could have operated at will directly under the point of detonation within a minute after the explosion without undergoing any hazard from nuclear radiation. Furthermore, there was no long-range fall out of sufficient magnitude to produce any hazard. All the nuclear radiation casualties in Japan were from the gamma rays emitted during the first few seconds following the detonation. About 50 per cent of the exposure from gamma rays is obtained in the first second after the detonation.

Based on the casualties in Japan and the measurements at the Bikini tests, it is estimated that the range at which a median lethal dose (400 r) is obtained from an air burst bomb is about three-fourths of a mile. The exposure decreases quite rapidly with distance, so that at 1 mile less than 100 r is obtained and this may be considered the approximate limit of casualties from nuclear radiation.—Scoville, *M. Ann. District of Columbia*, May '51.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR FEBRUARY 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During February 1951			Rates (Annual Basis)		
	Total	White	Colored	1951	1950	1949
Total live births.....	6345	**	**	26.8	26.6	29.0
Total stillbirths.....	164	**	**	25.2	22.1	26.5
Deaths, stillbirths excluded.....	2280	1275	1005	9.6	8.9	8.5
Infant deaths: under one year.....	270	107	163	42.6	30.6	31.0
under one month.....	156	67	89	24.6	20.5	20.2
Cause of Death						
Tuberculosis, 001-019	66	31	35	27.9	25.6	37.3
Syphilis, 020-029	12	1	11	5.1	4.3	4.7
Dysentery, 045-048	3	1	2	1.3	0.4	1.3
Diphtheria, 055	3	1	2	1.3	0.9	
Whooping cough, 056	1		1	0.4	1.3	2.1
Meningococcal infec- tions, 057	1	1		0.4	0.4	0.9
Poliomyelitis, 080, 081					0.4	
Measles, 085						2.6
Malaria, 110-117						0.4
Malignant neoplasms, 140-200, 202, 203†	187	122	65	79.1	85.2	72.1
Diabetes mellitus, 260	34	19	15	14.4	8.5	7.7
Pellagra, 281	1		1	0.4	2.1	1.7
Vascular lesions of central nervous system, 330-334	261	149	112	110.4	107.8	88.8
Other diseases of nervous system, 300-318, 340-398	43	26	17	18.2	12.8	17.6
Rheumatic fever, 400- 402	4	1	3	1.7	2.1	1.7
Diseases of the heart, 410-443	705	447	258	298.2	259.5	260.5
Diseases of the arteries, 450-456	30	20	10	12.7	18.7	12.0
Other diseases of the circulatory system, 444-447, 460-468	21	10	11	8.9	12.8	18.9
Influenza, 480-483	42	12	30	17.8	14.1	8.2
Pneumonia, 490-493	148	71	77	62.6	46.4	35.6
Bronchitis, 500-502	7	5	2	3.0	3.4	3.9
Appendicitis, 550-553	2	2		0.8	3.4	2.1
Intestinal obstruction and hernia, 560, 561, 570	9	5	4	3.8	5.5	5.1
Gastro-enteritis and colitis (under 2) 571.0, 764	6	4	2	2.5	2.1	4.3
Cirrhosis of liver, 581	14	11	3	5.9	7.2	4.7
Diseases of pregnancy and childbirth, 640-689	8	3	5	12.3	17.2	8.6
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	1		1	1.5	1.6	
Congenital malforma- tions, 750-759	19	13	6	3.0	3.5	3.0
Accidental deaths, total, 800-962	160	94	68	67.7	43.5	46.3
Motor vehicle acci- dents, 810-835, 960	50	36	14	21.2	21.7	12.0
All other defined causes	365	187	178	154.4	161.0	146.3
Ill-defined and un- known causes, 780, 793, 795	128	39	89	54.1	43.9	52.4

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the February reports of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Atomic Warfare Burn Shock—The chief cause of early burn shock is depletion of red cell and plasma volume by loss into the burned tissues. Proper treatment for prevention or relief of burn shock includes adequate transfusion with plasma and whole blood. Every seriously burned patient requires some whole blood; but if the extent of the burn is less than 20 per cent of the body surface, and fluids are taken well by mouth, little or no plasma or blood is necessary. If the extent of the burn is 20 to 35 per cent, 1 to 2 liters of plasma or whole blood or more must be given during the first twenty-four hours, and about one half this amount the second day. Burns involving more than 40 per cent of the body surface require so much blood and so much expert medical attention, it is highly unlikely in an atomic attack that many such burn patients can survive. To patients with less than 20 per cent burn, fluids must be offered regularly and in such amounts that a large intake of water and other fluids will assure an adequate hourly output in urine. Trained laboratory workers will not be present in numbers sufficient to make serial venous hematocrits or blood hemoglobin levels for the guidance of shock therapy. So reliance will have to be placed on such a simple clinical sign as hourly urinary output. Van Slyke contends that shock is seldom serious in the burn patient who maintains a steady, adequate urinary output.

Even conservative calculations of the number of burn casualties to be expected in atomic attack call for reserves of plasma and blood in such tremendous quantities as to make it almost out of the question to hope for an adequate supply to be delivered to a stricken city. Moreover, it may prove to be wise to save the blood and plasma for later use in the more serious cases. It is, therefore, essential and urgently imperative that a safe, easily stored plasma substitute be developed at once.

The need for antibiotic therapy in burns seems to be efficiently met by penicillin. Proper planning should provide adequate stockpiles, but large numbers of lay persons will have to be trained in giving it by hypodermic means, unless current research proves the usefulness and effectiveness of local application to burn wounds. But at any rate, systemic administration will have to be arranged for those burn patients with associated wound injury, so that severe infections may be prevented. Aureomycin may prove to be a valuable drug for those burn patients who have been exposed to large amounts of gamma and neutron radiation.

I am sure it is quite plain by this time that intelligent planning must include provision for the training of many hundreds of nonmedical persons in every city so that they may become qualified to administer the care which has been outlined in the mass treatment of burns.—*Bohannon, New Orleans M. and S. J., June '51.*

BOOK ABSTRACTS AND REVIEWS

Surgical Forum: Clinical Congress of the American College of Surgeons, 1950. Edited by the Surgical Forum Committee consisting of Doctors Owen H. Wangenstein, Warren H. Cole, Robert E. Gross, Michael L. Mason, Carl A. Moyer and I. S. Ravdin, with 393 contributors. Cloth. Price, \$10.00. Pp. 665. Philadelphia and London: W. B. Saunders Company, 1951.

This book represents the publication for the first time of the papers presented at the Surgical Forum of the American College of Surgeons. The Surgical Forum was born out of the great need for young men engaged in research on surgical problems to have an opportunity to bring their work before an audience of surgeons. This Forum is given at the annual Clinical Congress of the College and constitutes a very valuable part of this meeting. Dr. Evarts A. Graham states in the foreword: "Young men have the new and constructive ideas together with the enthusiasm to carry them out. If they lack the experience of their elders they also lack their inhibitions which often stifle the development of new ideas. The Forum has given the young men the opportunity to present to their peers and contemporaries their research founded on young imagination. This opportunity certainly has been a potent factor in making American surgery the virile and progressive profession that it is."

There are 165 articles on many different subjects. These articles are uniformly well written and easy to read. They appear to have been edited for clarity and readability. There follows the title of every fifth article.

Surgery of the Lungs and Esophagus: One-Stage Costoversection Thoracoplasty; The Effect of Changes in Pulmonary Circulation on Collateral Ventilation; Experimental Production of Esophagitis and Esophageal Ulcers in Dogs.

Surgery of the Stomach: Measurement of Electropotentials of the Stomach; The Effect of Pyridoxine Deficiency on Gastric Secretion and Blood.

Surgery of the Peritoneum, Small and Large Bowel and Pancreas: A Study of Liver Lymph in Experimental Peritonitis of Intestinal Origin; Recovery of the Bacterial Enzymes from Thoracic Duct in Intestinal Strangulation Obstruction; Acute Pancreatitis: The Influence of the Autonomic Nervous System on the Course of Experimental Pancreatitis.

Liver and Bile Ducts, Portacaval Anastomosis and Kidney: The Experimental Production of the Hepatorenal Syndrome in Dogs; Tolerance of Dogs to Occlusion of Entire Afferent Vascular Inflow to the Liver.

Cardiac Surgery: The Circulation Time During Manual Massage of the Fibrillating Dog's Heart; Experimental Mitral Stenosis: A Method for Its Production in the Dog.

Blood Vascular System and Blood Flow: The Preservation of Arterial Grafts by Freezing; An Experimental Study of the Physiological Role of an Anastomosis Between the Left Coronary Circulation and the Left Internal Mammary Artery Implanted in the Left Ventricular Myocardium.

Neurosurgery: The Effect of Prefrontal Lobotomy on Peptic Ulcer; Brain Revascularization after Carotid-Jugular Anastomosis: Further Assessment by Angiography; Studies of Formation, Flow and Absorption of Cerebrospinal Fluid: II. Studies with Heavy Water in the Normal Man.

Wounds and Wound Healing, Tissue Transplantation, Antiseptics and Antibiotics: The Effect of Various Enzymes on Infected Wounds and Necrotic Tissues; An Experimental Study on Refrigerated Skin Grafts Stored in Ten Percent Serum.

Water, Electrolytes, Protein, Preoperative and Postoperative Care, Fat Metabolism, Nutrition and Skin Preparation: Endocrine Mechanism Concerned in Postoperative Electrolyte Changes.

Blood Transfusion, Coagulation, Shock and Hemorrhage: A New Technique for Collection, Storage and Administration of Unadulterated Whole Blood; A Study of the Clotting Mechanism in Thermal Burns.

Malignancies and Endocrines: Explorations Following Resection of the Colon, Rectum or Stomach for Carcinoma with Lymph Node Metastases; The Effect of Sympathectomy and Thiocyanates upon Experimental Hypertension.

Anesthesia: A Simple, Efficient Respirator and Anesthesia Bag for Open Chest Surgery; The Effect of Posture and of Hypoxia on Cardiac Output in the Normal Human Subject.

It can be safely said that many new ideas and conceptions published for the first time in this book will become an important part of tomorrow's surgery.

Luther Hill, M. D.

The Science of Health. By Florence L. Meredith, B. Sc., M. D., Fellow of the American Medical Association, American Public Health Association and American Psychiatric Association. Second edition. Cloth. Price, \$3.75. Pp. 452, with 48 tables and charts and 134 illustrations. Philadelphia: The Blakiston Company, 1951.

The author of a work of this kind has a two-fold task, not only to provide adequate knowledge regarding an important subject but also to keep the result of his or her efforts within reasonable physical limits. Dr. Meredith has handled both of these responsibilities well.

It is no simple matter to describe the structure

and functions of the human body, tell about the most important diseases that afflict the human race, and lay down sound principles of solid health in 452 pages. It is to this author's credit that she has done so. Moreover, she has done excellent justice to her theme.

This book is intended primarily for students and their teachers. It provides a wealth of teaching material. It also is written in such a way that the average reader, with or without someone to supplement what he reads, can learn much from its fact-crowded pages.

A word or two about the illustrations may be in order. There is a wealth of diagrams and pictures to make clear descriptions and discussions that might be somewhat vague in cold, unassisted type.

Following the newer trend, *The Science of Health* is not confined to physical health. It throws a revealing light upon the diseases and conditions affecting the minds and the emotions, as well as the heart, liver and kidneys. And it boldly invades those aspects of public and individual health that lie somewhat outside the rigid walls of sickness and health. We find, for instance, discussions of such matters as personality traits, mental conflicts, social development, "specific ego motives," etc.

There is indeed a wealth of knowledge in this medium-sized volume. And it is interestingly and attractively presented.

John M. Gibson

Natural Childbirth. A Manual for Expectant Parents. By Frederick W. Goodrich, Jr., M. D. Second writing, 1950. Cloth. Price, \$2.95. Pp. 168, with 14 pages of photographs from the Maternity Center Association Birth Atlas and 5 pages of illustrations of exercises. Prentice Hall, Inc., Publishers, 70 Fifth Avenue, New York 11, N. Y.

Written primarily for expectant parents, *Natural Childbirth* is described as a preparation for childbirth—intellectually, physically and emotionally—so that mothers may realize their potentialities and use them to the greatest advantage.

The book then proceeds to explain how this may be done—intellectually, with a knowledge of the structure and functions of the reproductive organs; physically, by the application of prescribed diet and exercises; emotionally, by a confidence in the doctor who has explained each phase of this experience so thoroughly that there is nothing new and frightening about it.

Although the book is referred to as a *Manual for Expectant Parents*, reading it would be time profitably spent by many others as well. The chapter on Relaxation makes one feel like trying it out, and who doesn't need to relax. Nurses in obstetrics would profit by being familiar with the exercises described and pictured, and knowing when they should be instituted during labor. As an aid to public health nurses, this book should prove invaluable by enriching their background

on maternal hygiene, thus improving the content of home visits, maternity clinics and expectant mother's classes.

From the first visit to the doctor's office, and his detailed explanation of the physiology of pregnancy, to the last chapter of the adjustments at home, the language is easily understood. The reader is not burdened with technical terms. Understanding of the anatomy, the exercises, and processes of labor is furthered by drawings and illustrations. Thus forearmed, this experience is entered into with intelligence and preparation rather than with ignorance and fear.

Mildred A. Jackson, R. N.

Techniques in British Surgery. Edited by Rodney Maingot, F. R. C. S. Illustrated. Cloth. Price, \$15.00. Pp. 734, with 473 figures. Philadelphia and London: W. B. Saunders Company, 1950.

Techniques in British Surgery is composed of 691 pages of subject matter, followed by approximately 40 pages of index. This index of subjects is particularly valuable in this type of book as there is no consecutive arrangement in the subject matter. Twenty-nine authors contribute articles in their specialties, and the entire book is edited by Rodney Maingot, F. R. C. S.

The book is divided into four parts: Part I, consisting of the head, neck and spinal column. There are 90 pages in this portion of the book.

Part II is composed of different subjects relating to the thorax. In this section there is an excellent chapter on congenital defects of the heart, and one on the surgical treatment of pulmonary tuberculosis. Part II on the thorax contains 190 pages.

Part III, on the abdomen and pelvis, contains approximately 210 pages. Several excellent articles are included in this part.

Part IV is devoted to the extremities and contains approximately 200 pages. The orthopedic and peripheral circulatory conditions appear in this part as would be expected.

The reviewer particularly likes this type of book, consisting of separate articles by different individuals. It is interesting to note different points of view, and different styles of writing. In a book constructed as this one is, there are of course a number of omissions, but this is expected. It is, in the reviewer's opinion, distinctly not a book of great value as a teaching text, but as an aid to the surgeon in active practice it has a great value. Dr. Maingot has shown great care in the selection of his authors, and has done an outstanding service as editor.

The reviewer at first felt obligated to read the entire book, and as he progressed the obligation became a very distinct pleasure.

John L. Branch, M. D.

Greenhill-De Lee's Obstetrics. By J. P. Greenhill, M. D., The Michael-Reese Hospital, Chicago. Cloth. Price, \$12.50. Pp. 1020, with 1140 illustrations on 870 figures, 214 in color. Tenth edition.

Philadelphia and London: W. B. Saunders Company, 1951.

This is the 10th edition of a textbook of obstetrics which has been a standard work since 1913. Although the last previous edition was published only four years ago, many changes and additions are presented in this latest edition. Among the new additions to this text are important data concerning the physiology of the uterus, particular emphasis on roentgen studies in primigravidas, new data concerning analgesia and anesthesia, and critical investigations of the toxemias of pregnancy. The sections on the treatment of abortion and hemorrhage of pregnancy have been changed considerably. In fact, the entire book has been almost completely rewritten. The section on the treatment of puerperal infections has been completely changed and includes the latest ideas on the use of antibiotics in these conditions.

Sections on saddle block anesthesia, venous complications during the puerperium, and the psychology of pregnancy, labor, and the puerperium have been written by different authors who are authorities in their fields. The illustrations in this book are improved over the older editions. Some of the older pictures have been deleted and 151 new ones have been added.

Through the years, this book has been considered one of the authoritative texts on obstetrics. Since the death of Dr. DeLee, this work has been ably revised by Dr. Greenhill. As has been said of previous editions, this book is as nearly complete as a textbook of obstetrics can be. It should be owned and read by all who treat obstetric patients. It is strongly recommended to all students and practitioners.

Joe W. Perry, M. D.

Clinical Laboratory Methods. By W. E. Bray, B. A., M. D., Professor of Clinical Pathology, University of Virginia; Director of Clinical Laboratories, University of Virginia Hospital, Charlottesville. Cloth. Price, \$7.25. Pp. 614. St. Louis, Mo.: C. V. Mosby Company, 1951.

The revision of *Clinical Laboratory Methods* by Bray has been quite complete, and ranging from discussions on ACTH to such commonplace tests as prothrombin determinations.

The reviewer is particularly impressed with the section on urines and blood chemistry. It is presented in short, concise terms so that the busy individual can usually pick up all the information he needs in a short time. It is regrettable, however, that more alternate methods of chemical analysis were not given.

The color plates in the hematology discussion are carried over from former editions but are beautifully reproduced, something which cannot be said for all laboratory manuals. In the discussion of blood typing, the author uses terms in the reverse order of the now accepted form; such as, Type A (anti-B) rather than anti-B (Type A). This might be thought of as unimportant but since most sera now are labeled anti-A or B, it would have been wiser to stress the newer terminology, certainly a source of confu-

sion to people trained in the old nomenclature. The whole field of parasitology is very adequately and clearly presented, along with alternate methods.

The section on bacteriology contains some naive statements which, to a bacteriologist, would imply acceptance as a matter of fact; such as, methods for the isolation of Borgen's streptococci as a cause of colitis or the recommendation of Meriglia's media for the isolation of tuberculosis organisms to the exclusion of other proven types of media. The reviewer also questions the accuracy of the opsono-cytophagic test in which sodium citrate is used as the anticoagulant instead of heparin.

Fairly complete sections are also included in toxicology, serology, and surgical pathology. And a feature of the book particularly liked is the chapter on indicators, stains and reagents.

Admittedly, the above criticisms are all minor and in no way reflect on the major portions of the book. It is recommended by the reviewer as an addition to the laboratory library, which will be found very useful to people in this field.

Thomas S. Hosty, Ph.D.

Spine Injuries—Uncomplicated spine injuries are relatively common, cause considerable discomfort, and may be satisfactorily treated by perseverance in conservatism. Thorough roentgen examination, including anteroposterior, lateral, oblique views and pictures taken through the open mouth, should be made as the patient's condition permits. In some cases diagnostic films may not be obtainable until traction has been started and relaxation of the neck muscles secured so that the cassette and tube can be positioned properly. During treatment additional roentgenograms are valuable to show whether reduction has been obtained and held. The head halter method of traction can be made comfortable enough for the average patient and has the advantages of being generally available, easily adjustable, and simple enough that an attendant can release and replace the traction at rest periods.

Gradual, steady traction, whether by head halter, Glisson's sling, or Crutchfield tongs, with the patient conscious is preferable to attempts at immediate manipulative reduction with or without anesthesia in instances in which the odontoid process is involved. This pivot which sticks up into the atlas from the axis must stay in front of the transverse odontoid ligament, for the space in the spinal canal behind this ligament is occupied by the highly sensitive medulla oblongata, which will not tolerate trauma. In injuries below the axis manipulative measures could be used if needed and, in the case of dislocation with locked facets, might well be required.—*Watson, Texas State J. Med., June '51.*

Mechanical and antibiotic therapy . . . are not the treatment of pulmonary tuberculosis. Rest is the treatment. Mechanical therapy and the antibiotic drugs supplement rest, but they do not supplant it.—*Hayes, California Med., December 1950.*

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SURGERY OF THE PROSTATE GLAND

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The passing of the years brings to the physician in urologic practice not only the acquirement of actual knowledge but also the development of a philosophic, as well as scientific, background if he has ordinary intelligence and the ability to grasp ideas; being ever on the alert, with his eyes and ears open but his mouth shut. Experience results in a broadening of perspective, as well as a greater aptitude for evaluating situations which present, and to handle them with a better sense of judgment. Unfortunately, one can also develop a dogmatism which, in time, will only lead to a narrowing of perspective, and lessening of sense of values and the committing of errors in judgment. The modern urologist cannot remain confined within his own special field and expect to practice medicine for the greatest benefit of the patient. We always learn something by contact with our fellow practitioners, and continued study is very necessary.

It is most important to take a careful history, and carry out a complete general examination to be able to assay the patient's condition, to evaluate renal damage, and to detect the presence of associated disease, especially of the cardiovascular system. Blood examinations, including non-protein nitrogen estimations and Wassermann reactions, are done to supplement, not replace, clinical investigation. Only when there is evidence of renal insufficiency, when the patient is febrile, when the bladder is grossly

over-distended, or when there is serious associated disease do I carry out preoperative preparation. If drainage is necessary, a catheter is passed, all urine drained off, and the catheter left in. I admit that there are risks in doing this but they are incidental to disturbing the very abnormal balance to which the patient had become accustomed, and it cannot be avoided by gradual decompression. I have never practiced gradual decompression, and it was never practiced in my intern days. I have never seen a case of suppression of urine followed by rapid emptying of an over-distended bladder.

Vesical neck obstruction remains the principal indication for operative interference in pathology of the prostate gland. I am in complete agreement that definite rules cannot be laid down as to the amount of residual urine the patient must have before operation is advised. Some patients go for long periods with a large amount of residual urine without apparent renal damage, whereas others with much less become seriously ill.

A urologist must be trained in all phases of the specialty: diagnosis, instrumentation, various types of local therapy, and surgery, both closed and open operations.

In treating the geriatric patient with prostatic pathology, the passing of such instruments as catheter, cystoscope, sound, and resectoscope must be very gentle and without trauma. Too many have the idea that any one can pass a catheter, a sound, or a cystoscope without having any special training, and, as a result, trauma, at times of

great magnitude, is the sequel of a not too careful manipulation of these instruments.

In the first part of this century there was much in the literature about the value of perineal prostatectomy as compared to suprapubic prostatectomy. I had the opportunity to study under Dr. Hugh Hampton Young, who was the foremost perineal authority in this country, and later of studying under Dr. J. Bentley Squire, the foremost adherent of the suprapubic route of attacking the prostate. I was present in 1929 at Miami when Dr. T. M. Davis, in discussing surgery of the prostate gland, stated that he, with Stern's resectoscope, could remove all of the gland without making an incision. For ten years after this announcement the literature was full of pros and cons about transurethral prostatic resection, and then this was followed by Millin bringing out the retropubic approach to the prostate gland. All of these approaches are capable of bringing about good results in well trained hands of physicians who have the perspective of proper judgment. None of these approaches is devoid of danger in the hands of the inexperienced. With the evaluation of the information gained by careful physical examination and history, it is of the greatest value for the surgeon personally to check over the history with the patient, to explain the procedure to be undertaken, and to assuage his fears. No amount of laboratory investigation can make up for such an omission. This will also avoid the necessity for preoperative sedation in large amounts.

I elect to use the perineal route in about 1 per cent of my cases. On around 10 per cent of my patients I do a one-stage suprapubic prostatectomy as outlined by Rose. I have not tackled the retropubic route as I am sure I can get better results with the method I am now using. I use the McCarthy resectoscope exclusively in transurethral resections, and while I have Scott's pistol-grip resectoscope, and the Nesbit modification, I prefer the rachet on the McCarthy resectoscope to either of these.

Formerly, I carried out a preliminary cystotomy on most patients who were in poor health, or on those who had very large prostates, or in whom vesical calculi were present. It is an excellent practice but with more experience I have done it less frequently. The suprapubic fistula, with its

uncertainties, is an annoyance to both doctor and patient. Daugherty uses a catheter inserted into the bladder suprapubically for drainage in all cases that he does away from his own hospital staff. This spares him from being called back to control hemorrhage or to unstop catheters, as the inexperienced seem to always want to tinker with an indwelling catheter.

The control of hemorrhage during and after operation is a most important technical consideration, and a very common cause of anxiety to the beginner. The amount of bleeding depends to some degree on the size of the gland, the amount of congestion present, and the type of patient. In general, hypertensive sclerotic individuals and those with large soft glands bleed most. In the earlier stages of one's experience it is better to control bleeding fairly well as one resects, since continued bleeding in a long drawn out procedure is conducive to fall in blood pressure, which adds to the difficulty in finding bleeders, and subjects a debilitated patient to the hazards of shock. This should be anticipated if the operation presents unusual difficulties so that you may plan to stop your procedure at any time, or that intravenous fluid, blood or blood substitutes may be given during or following the operation.

After passing the resectoscope sheath with Timberlake obturator in place, the working unit is introduced as the obturator is removed, and careful inspection made of the tissue which is obstructing and a survey made of that which is to be removed. The operation usually begins as best suited to the individual operator. In my hands I take the left lateral lobe out first, bringing the sheath forward enough during the cut to cut the entire length of the prostatic urethra. I begin at the upper portion of the left lateral lobe and gradually come down in successive sections. After this lobe is removed I go to the right lateral lobe, as it falls in readily and is easily attacked. After this lobe is removed the median lobe is easily gotten to; the instrument is pressed firmly against the tissue to be included in the bite so as to engage as large a piece as possible. The index finger of the left hand is inserted into the rectum from time to time. This enables one to identify the sphincter accurately. Furthermore, it keeps one oriented and generally

facilitates the entire removal of the gland. The operator should learn to recognize tissue so that he knows when he cuts gland, or when he exposes the vesical neck or prostatic capsule. One can, in most cases, do as complete a prostatectomy as is done by any method that does not remove the capsule. It is wise, however, to leave a thin layer of prostatic tissue on the capsule. It avoids the danger of venous bleeding and extravasation. If the operation cannot be completed in an hour, it is probably better to do it in two stages.

I do not believe that chemical agents have any real place in the control of bleeding following resection, nor have I found catheters with distendable balloons to be of real assistance, although I use them and inflate the bag on the catheter for the first hour following resection. I control bleeding by coagulating as I go along, but if there is a lot of tissue to be removed I do not stop unless I get quite a spurter, preferring to do the coagulating at the end of the different rows of resections.

Secondary hemorrhage may occur after resection as after other methods of prostatectomy. Its incidence is probably less than 0.5 per cent. I have seen only two mild cases in my last two hundred resections. It calls for prompt removal of the clot, and usually nothing more is necessary. It is of the greatest importance that no blood clot be allowed to collect in the bladder after operation, but it has been common experience that with adequate control at operation there is much less need for irrigation after the patient returns to his room. In fact, I have practically discarded all irrigation on these cases, having found that the hardest job is to get hospital personnel to leave the catheter alone. This quiescence of the catheter minimizes the danger of introducing infection, disturbs the patient less, and simplifies the whole postoperative procedure.

The prevention of stricture following resection is one of the most important considerations in the operation. In my experience the part of the urethra at which stricture forms most readily and is most intractable is the penoscrotal angle. If the resectoscope is gripped at all tightly at this place during operation, trauma and ischemia at the point of tightness result. Later, peri-

urethral infiltration is noted; and, finally, a tight stricture which resists dilatation results.

Having had to deal with the most serious complication, let us consider means of prevention. It is generally agreed that a tight meatus should be slit, not dilated, doing a meatotomy, and I am satisfied that the same procedure should be employed in the anterior urethra—splitting it in the middle on the roof with a urethrotome, should it be too tight to admit a 28 F. Walther sound. My practice is as follows: I first pass a 26 F. Walther sound, and follow this with a 28 F. If this passes easily with gentle manipulation, I go to the resectoscope sheath, using the Timberlake obturator. A tight meatus receives a meatotomy on the floor so that the sound passes freely. I have not had a urethra where the caliber was too small to admit a 28 F. resectoscope sheath with Timberlake obturator in place. If there is any tightness along the urethra, especially at the penoscrotal angle, it will be evidenced by the passing of the Walther sounds, since their passing is very instructive as to the condition of the urethra when they are gently passed. The resectoscope sheath should be passed with ease, and there should be no constriction evidenced at all. This forestalls any added trauma or ischemia, with subsequent infiltration and scar formation.

Following a transurethral resection, the external meatus must be examined at intervals for any sign of narrowing. Often, even if meatotomy was not considered necessary, there may have been some slight tightness which increased as the operation progressed, resulting in ischemia and infiltration. If this is neglected the patient may present himself some weeks later with a poor stream, which is found to be due to a meatal narrowing. This can be prevented by a gentle weekly dilatation until the reaction subsides. Even if the urethra is adequate, a prolonged operation or lack of gentleness may induce sufficient trauma to cause stricture. It is important that the instrument be properly lubricated, as a thin lubricant may not last for an operation requiring an hour. With these precautions, urethral stricture does not occur.

It has been found that during the first two weeks after prostatic resection the prostatic

cavity is covered with superficial slough and adherent mucus. Here and there a red granulated surface may be seen. After two or three weeks the slough is separated and the prostatic cavity is clean, red, and glistening, except at the vesical neck, on the floor below the trigone, and where tags of devitalized tissue have been left. Quite frequently, after three weeks, definite islands of epithelium can be seen in the prostatic cavity. At the end of a month the urethral convalescence should be complete and the entire area healed.

Microscopically, there is, first, a superficial necrosis and sloughing and inflammatory cell infiltration, followed by the development of granulation tissue. During this period there is a proliferation of the epithelium in the ducts and acini near the surface, and a metaplasia of the transitional type. In about three weeks, epithelium can be seen spreading out to the surface of the new granulation tissue. This takes place over a very large number of points and, consequently, epithelization is rapidly completed, usually within a month.

The postoperative course of these patients closely parallels what one would expect from the study of this epithelial repair. During the period of healing the urine is turbid and contains particles of slough and even blood. There is some cystitis, and the patient has variable frequency and dysuria, but at all times postoperatively there is less actual discomfort than after any open operation. After two weeks these symptoms begin to subside, and after a month have usually disappeared altogether. Careful examination in a few instances following suprapubic prostatectomy leads me to believe that the process of repair is similar.

Most of the difficulties have been from infection and incrustation and ulceration. This is becoming less frequent with more attention to details, fewer irrigations, and the use of antibiotics and the sulfonamides. If large tags of devitalized tissue are left at operation, the chances of infection and continued trouble are increased. Similarly, incomplete removal of the prostate may be a cause of failure to achieve a good result, though an entirely satisfactory function may be obtained without a total prostatectomy. The more complete the operation the more

likely the patient is to have a rapid convalescence and complete symptomatic relief. I have seen some patients who have had recurring bleeding for long periods. These were patients who had large glands which were not completely removed, or cases in which further adenoma developed. This can be cured by resecting the offending tissue. Unlike other procedures, a second resection operation is easier than the first.

Incontinence is said to be a very real hazard but is so unusual that I am not concerned about it. The sphincter could be damaged only by the most gross negligence, and most of the instances of incontinence I have seen have been due to incomplete operation or subsequent stricture. It is rather surprising that it is not seen to a greater degree in those cases of advanced carcinoma where the vesical neck is rigid.

In a recent review of prostatic surgery by Lenen and Nesbit it was found that the incidence of epididymitis after both suprapubic and perineal operations was about 20 per cent. In three hundred prostatic resections in which the vas was not ligated the incidence was 4 per cent. In a similar group in which ligation was carried out the incidence was 2.7 per cent. Lenen and Nesbit did not feel there was significant difference in either the number of cases or the severity of the complication. However, they still practice vaso-ligation. In my experience, I do not know just what causes this epididymitis. In one of my suprapubic prostatectomies where I ligated and severed the vas on both sides, the patient had recurrent epididymitis intermittently for the rest of his life, seven years. I then stopped doing vas ligations. John T. Short of Fort Wayne, who devised a needle to ligate the vas, later discarded the practice of vas ligations in prostatic surgery.

Many will insist that the absence of an incision is not a worthwhile consideration, but patients do not feel that way and I agree with them. Any open operation presents risk of infection and hernia, apart from the special hazards of either suprapubic or perineal incisions. It is a very real advantage in patients who develop retention following other surgical procedures, such as excision of the rectum where an open operation would be undesirable or impossible.

In doing Millin's operation one always feels that a considerable cavity has been opened up, which adds both to the risk and discomfort of the patient. While Millin's operation does expose the prostatic cavity, no open operation can provide such adequate scope for dissection under visual control as that obtained by the transurethral route of removing the prostate. In the hands of some it would appear that other surgical approaches to the enlarged prostate would be best in their hands, but in a limited experience I doubt whether the advantage is sufficient to compensate for the technical difficulties which present, following the approaches either of the one-step suprapubic prostatectomy or a perineal prostatectomy.

I am not suggesting that the transurethral operation is an ideal one. In an ideal operation it should be possible to remove the

entire prostate and leave no raw cavity to heal. In addition, it would have to be simple, safe, and give good results. No operation at present devised meets such requirements, but the transurethral route has stood the test of time and is being more widely practiced each year. No urologist's training today can be considered complete if he cannot practice good transurethral surgery. The best claim one can make for the end results of this method is simply to state the fact: that it is demanded by both patient and the physician in this area where patients come from relatively small communities, and the results achieved by any operation is common knowledge. The results from prostatic resection are as good as the best that can be obtained by any method.

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PSYCHOTHERAPY WITH CHILDREN

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The psychiatric disorders of children and infants that are particularly amenable to treatment by psychological methods are those for which the child may be taken to any practitioner of medicine. A great number of such problems in children and infants are skillfully handled by the intuitive physician to whom they are first taken for help with the problem. This is perhaps most strikingly observed in the practice of the family physician and the pediatrician, who, because of their acquaintance with the various members of the family involved, are often sufficiently aware of the source of the difficulty to be able to remedy it by the judicious use of sympathetic discussion with, and advice to, parents.

The conditions for which the child may be referred to the child psychiatrist may, for the purposes of simplification, be classified as follows:

1. Disorders of intellectual development: a) mental deficiency, b) specific reading, writing or spelling disabilities.
2. Congenital, neoplastic, post-traumatic, or post-infectious organic brain diseases, including the epilepsies.
3. The major psychosis of infancy and child-

hood (childhood schizophrenia or dementia praecox).

4. The emotionally determined disorders:

- a. The psychoneuroses, manifested primarily in symptoms, such as anxiety states, phobias, hypochondriacal complaints, feeding problems, sleep disturbance, enuresis, tics, stammers, sleep walking or the like.
- b. The behavior disorders, manifested primarily in overt behavior, such as rebellion, destructiveness, defiance, disobedience, delinquency (lying, stealing, truancy), aggressiveness, or sexual aberrations.

The management and treatment of the disease conditions covered by the first two groups have traditionally been relegated to the teacher, pediatrician, neurologist, or other non-psychiatric practitioner, or, when indicated, to the appropriate hospital or other institution. Since such cases are not treated by psychological methods alone, we shall concern ourselves with the last two groups—those disorders correctable or modifiable by psychotherapy.¹

The conditions to be treated by psycho-

1. This does not mean, however, that the brain-injured or defective child has any less need for skillful handling based upon a thorough understanding of the psychological reactions and needs that are peculiar to these first two groups.

therapy primarily—childhood schizophrenia, the psychoneuroses, and the behavior disorders—are those wherein the interest of the child psychiatrist chiefly lies, and in which the psychiatric specialist has probably made his greatest contribution. These disorders belong to the group of psychiatric problems of children produced by emotional conflict and correctable or modifiable by psychological means.²

The emphasis of interest in the emotionally produced, psychologically correctable disorders of childhood has received its greatest stimulus within the past few decades. Modern psychiatry is no longer the discipline that concerns itself solely with the description and classification of the insanities and in providing custodial care for the victims of mental illness. Psychiatry today is intimately concerned with the study of the human personality, healthy and diseased, and with those emotional conflicts reflected in the disorders of personality—in behavior or symptoms. We conceive of the personality as the result of the interaction of the somatic and emotional needs, drives and strivings of the individual with the outside forces, demands, restrictions, opportunities, and encouragements of the environment, of the world about him.

Implicit in this consideration of the personality as a dynamic, reacting force is the concept of the child's personality as the product of the parents' molding. We see the child as the product of his somatic endowment—a relatively constant factor in the average child—and its interaction with the significant people and events in his environment. In the child's case the environment is essentially the parents, or parent substitutes (nurses, governesses, a "living-in" grandmother, aunt or the like) and the siblings. It is toward the family constellation that we immediately look when we see the child beset with neurotic or behaviorial problems that are indicative of emotional conflict.

2. Although the etiology of schizophrenia remains as yet obscure, the overwhelming emotional difficulties present in children suffering from this disorder, and the relative success with which favorable modification of the disorder is obtained by psychotherapy, will, perhaps, permit us to consider it an emotionally determined disease.

DIAGNOSTIC CONSIDERATIONS

When the child with a neurosis or behavior difficulty is brought to the child psychiatrist, we first look for the difficulty within the home. A careful history is obtained from the parents. Such a history includes not only the usual medical and developmental data, the recording of illnesses and operations, but much more significantly for our purposes an evaluation of feelings and attitudes on the part of the parents (or other significant people in the child's family) and of the child. We are, for example, less interested in the birth weight than in the parents' response to the newly arrived member of the family; less interested in *what* he was fed than in *how* he was fed; was feeding a burden to the mother, who wished to be done with it as soon as possible, or was it a mutually pleasant experience for both mother and child? Were first efforts at locomotion and other independent behavior encouraged or discouraged? Were toilet training and other disciplinary measures too strictly and punitively enforced, or too lax and inconsistent? Has the mother imparted anxious concern about the child's health to the point of producing a body conscious child? Has a busy or negligent father left all to the mother, at the cost of producing a "mama's boy"? What was the child's reaction to the birth of a new brother or sister, and how was the usual rivalry and jealousy handled? Has the untimely death of parents or other close relatives, separation, or divorce threatened the child's sense of belonging, and made him feel different, or sad, or guilty?

It is with such data that the child psychiatrist is interested.

As other diagnostic aids, in addition to usual physical and indicated laboratory examinations, we rely upon the child's behavior as we see him with his mother during consultation, and as we see him separately in the examining office. We observe the casual, bold, or timid way he approaches us, how he sizes the situation up, his spontaneity in talking, in answering questions, the manner in which he accepts or rejects toys offered him. We may often get a great deal of information indirectly by questioning him about what he likes to play, what his favorite story is, what his fantasies and dreams concern, what he would wish if he

had one or more "magic wishes." Often the child who can draw may, through this medium, reveal his fears, wishes, or conflicts. The child with sufficient command of language may in this manner convey to us his complaint, if the child himself actually has a complaint, or otherwise verbally give us information that is of diagnostic significance. Specialized psychological techniques, such as the intelligence score, the Rorschach ("ink blot"), and the Children's Apperception Test, are often useful complements for diagnostic evaluation.

Once the interview or interviews with the parents and the child have provided us with a working idea of what is going on in the child in response to what is going on in the family, we may be able to render advice or suggestions that will modify or correct the disorder in the child. Usually, however, by the time psychiatric consultation is obtained, the difficulty is of such duration or severity that such directives to the parents are not effective, and we must work psychotherapeutically with the child himself.³

PSYCHOTHERAPEUTIC TECHNIQUES WITH CHILDREN

Psychotherapeutic techniques in dealing with children are necessarily different from those used with adult psychiatric patients. The child, at whatever age, lives in a world quite different from that of the adult, not only actually different but also conceived in the child's mind differently. The child has less experience to draw upon for evaluation of what goes on about him; people and events may have considerably different significance for him than for adults. His thinking is less mature and logical than the adult's. His command of language and ability to put in words his fears, worries, and conflicts are less developed, as is his capacity for self-scrutiny.

To overcome the barriers in communicating with the child in adult terms about his problems, specialized techniques of treatment of emotional problems in children have been developed. Of these, probably the most widely used and popularly known is the technique of "play therapy" and its

modifications. The child psychiatrist's office is usually equipped with a variety of play materials, including dolls, toy soldiers, guns, automobiles, ships, building blocks, clay, materials for drawing and coloring, and the like, of such a variety as to appeal to most children of both sexes of the ages from infancy to late childhood, inclusive.

In a first therapeutic session with a child it is usually easy to interest him in play of some sort. He is invited to inspect the play materials for a few minutes so that he can make some selection of the ones he might like to use. In this play the psychiatrist, if invited, may join, or he may be the non-participating observer. This initial play serves the function both of putting the child at ease and allowing him to express himself in his most natural medium. The opportunity may be presented, during the play, for the psychiatrist to ask pertinent questions, although it is usually inadvisable to attempt too gingerly to extract information that the patient in the first interview seems reluctant to disclose.

In subsequent therapeutic interviews, one may employ one or more of several modifications of "play therapy," depending upon circumstances and indications. One may allow the patient to select his own materials and allow him to play spontaneously at whatever he may like.

Robert, aged 9, came from a home that was the scene of frequent quarrels and fights between his cruelly aggressive, domineering mother, and his usually passive father who could only assert himself by outbursts of temper during which he hurled dishes and lamps and overturned furniture. During treatment, Robert selected his own play. He would carefully and neatly set up toy furniture in a doll house, in which he placed two dolls representing the parents. He would then have the parent-dolls quarrel, then fight, and finally throw furniture, overturn chairs, tables, and the like. This was a repetitious theme in his play, although he was never able to refer to or discuss verbally this source of anxiety in the home.

It is often necessary or advisable to select for the child the materials he is to use and at times even set up specific play situations. This is indicated in the shy, inhibited, or repressed child who dares not make a choice for himself, or the child who uses his own play evasively to avoid approaching his real conflict.

Edward, a hyperactive, energetic child, suf-

3. At this stage, psychotherapeutic modification of parental attitudes also is usually necessary. Consideration of this subject, however, is not within the scope of this paper.

ferred by comparison with a younger brother who was decidedly the mother's favorite. Early in treatment he had abruptly dismissed the subject of his younger brother when the psychiatrist had broached it. In his spontaneous play during treatment sessions, he painted lifeless scenes, played soldiers, cowboys and Indians, and otherwise did everything possible to avoid indicating his feelings about people and events in his home. Somewhat later in treatment the psychiatrist set up a play situation with dolls, in which a mother was being very attentive to a younger brother to the neglect of the older. The psychiatrist then asked, "What does the older brother do now?" The patient slapped the younger brother doll to the floor, snatched the mother up, threw her to the floor, crushed her with his foot, then amputated her arm by pulling and twisting.

Some children may use play or motor activity of some sort to relieve tension during conversation with the psychiatrist.

Jack, a tense, restless boy, stuttered so severely during an interview with the psychiatrist that it was literally impossible to converse with him. The psychiatrist invited the patient to join him in playing darts. The discharge of tension through such muscular activity reduced the stuttering to the point that the patient could converse with the doctor sufficiently to air his problems and fears.

Other children, particularly older ones, may reject play of any sort and prefer direct conversational discussion of difficulties.

James, aged 10½ years, put away toys after some period of disinterested play. He began spontaneously to speak of his strong feelings of rivalry and hostility toward his somewhat older and stronger adolescent brother. The discharge of such feelings through "talking them out" with the psychiatrist enabled him to realize the more positive, friendly and affectionate aspects of his relationship with his brother. Subsequently the two were able to play and get along together much more harmoniously.

With still other patients, neither play nor conversation is used directly in treatment, and whatever of these activities takes place is incidental and irrelevant to the improvement that occurs. This is perhaps best called "relationship therapy." Favorable results are due to the beneficial effects of a healthy interpersonal relationship between the child and an adult—the psychiatrist—who can supply the friendly support and warm acceptance that, for whatever reason, the child has not been able to obtain from his parents. In such an indirect method of treatment, there may be no discussion nor even mention of specific difficulties the child has, nor any play or other activity designed to approach or solve emotional problems.

Ralph, 6 years old, a severely schizophrenic child, was withdrawn, seclusive, unable to play with other children or even tolerate his infant sister, extremely fearful of strangers; he spoke in an incoherent jargon, hallucinated voices talking to him, and imagined that he saw fires, smoke, and chimneys. In the hospital to which he was admitted, his activity during the interviews with the psychiatrist was characterized by such distractibility of interest and unintelligible speech that neither his play, behavior, nor conversation could be used to psychotherapeutic advantage. However, he soon responded to the psychiatrist's warmly affectionate, non-critical, accepting manner by marked improvement in his ability to play with other children, in the development of interest outside himself, and in the acquisition of intelligible speech. This improvement can only be explained as the result of a favorable relationship of an emotional nature that developed between the patient and the psychiatrist and other professional personnel of the hospital.

It is evident from the above discussion and presentations that the essence of that with which we deal in psychotherapy with children is the emotions—anxiety, jealousy, fear, hostility, affection, love, or the like. Whether our technique employs dealing with them directly in airing and discussing feelings, indirectly in play, or remotely in our relationship with the patient, it is through the favorable manipulation of the emotions that we are able to effect the desired change in the direction of improved emotional or mental health.

Pediatric Surgery—One of the most important aspects of preoperative and postoperative care is the careful regulation of the electrolyte, fluid, and nutritional balance in these infants and children. Special caution should be observed in determining the amount of saline to be administered to newborn infants since kidney function in this age group is relatively immature. Blood transfusion or plasma should be given as indicated by the red blood count, hematocrit and the plasma protein level. The rate of administration of the blood should be slow to prevent circulatory embarrassment. Because of possible blood loss at the time of surgery or the development of shock, blood should be available to be given during or following, if needed. In those conditions in which decompression of the gastrointestinal tract is desired the simple procedure of passing a Levin tube into the stomach and connecting the tube to a source of general suction is expedient in reducing distention. The use of high oxygen concentration in the tent is also helpful in diminishing the intestinal distention.—*Strange, New Orleans M. & S. J., July 1951.*

EMPYEMA DUE TO *PROTEUS* RETTGERI REPORT OF A CASE WITH RECOVERY

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and

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Although proteus infections occur frequently in the urinary tract, infection due to this organism rarely develops in the chest. In a search of the literature in 1947, Snorf and associates¹ were able to find only 3 cases of pulmonary involvement due to a proteus organism, all of which proved fatal; 2 of these were cases of pleurisy and one was a pulmonary abscess. These authors reported a case of pneumonia due to proteus mirabilis in which recovery followed treatment with penicillin and streptomycin. However, no case of empyema due to proteus has been found in the American medical literature. It would therefore seem desirable to report the following case of empyema due to proteus rettgeri in which the patient was successfully treated by the administration of chloramphenicol (chloromycetin) and gantrisen (3,4-dimethyl-sulfanilamide isoxazole), and by thoracotomy.

REPORT OF CASE

A white man, aged 39 years, was admitted to the hospital Nov. 28, 1949 for subtotal gastric resection, which was done the next day. Penicillin was given intramuscularly every six hours until December 1, when this antibiotic was changed to procaine penicillin, 300,000 units every twelve hours. Continuous suction by means of a Levine tube was maintained and fluids and vitamins were given parenterally. On December 2, the patient was up walking about and the following morning the Levine tube was removed but had to be reinserted that evening because of nausea and vomiting. On December 4, following an attack of coughing, the patient complained of severe pain in the left upper abdominal quadrant. The Levine tube was cleared and 200 cc. of fluid were aspirated from the stomach. The postoperative

course was afebrile until this time, when the temperature rose to 99.8 F. Examination at this time revealed no other significant findings. Because the patient was emotionally unstable and was known to have a low threshold to pain, the discomfort in the left upper quadrant was not considered too seriously.



(Fig. 1)

Roentgenograms of the chest (Fig. 1) and abdomen on December 5 showed no abnormalities. During the day the abdomen became distended and peristalsis was absent. It was believed that leakage at the site of the duodenal stump had produced peritonitis or that pancreatitis had developed. The administration of streptomycin (0.5 Gm. every six hours) was begun.

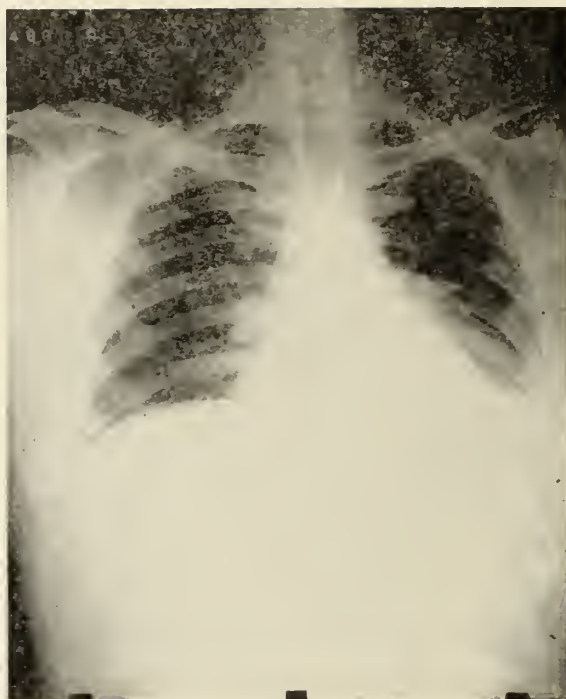
On December 6 there was less abdominal distention but dullness was noted at the base of the left lung. Bilateral basal rales were present. The veins in the hands were distended when the hands were elevated above

Note: Appreciation for editorial assistance is expressed to Miss Selma DeBakey.

1. Snorf, L. D.; Shepanek, Leonard; Foltz, E. E., and Harding, H.: Pneumonia Due to *Proteus Mirabilis* Treated with Penicillin and Streptomycin, J. A. M. A. 135: 222-223 (Sept. 27) 1947.



(Fig. 2)

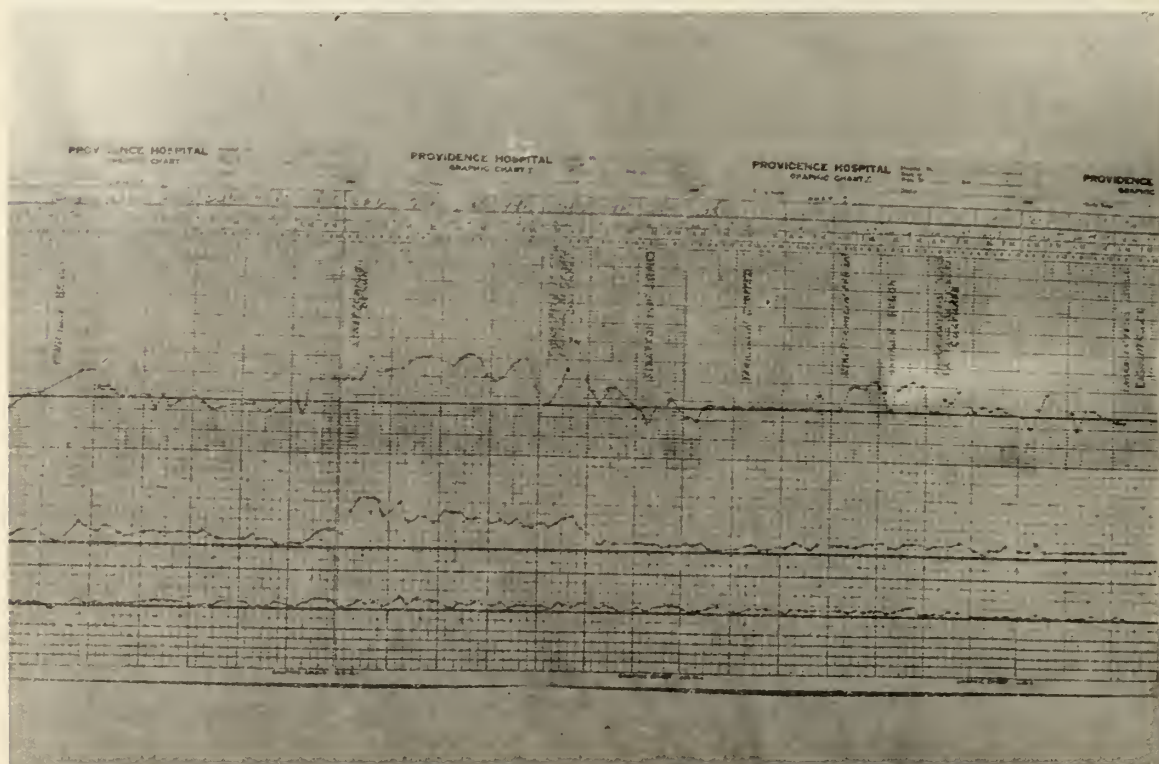


(Fig. 4)

the level of the heart, and mild cyanosis and tachycardia developed. A roentgenogram of the chest (Fig. 2) showed what was considered to be either fluid or atelectasis at the base of the left lung. A roentgenogram of

the abdomen revealed severe intestinal ileus.

In view of bilateral basal rales and dyspnea, it was thought that congestive heart failure might be present, so on December 7 mercurhydrin (2 cc. intramuscularly) was



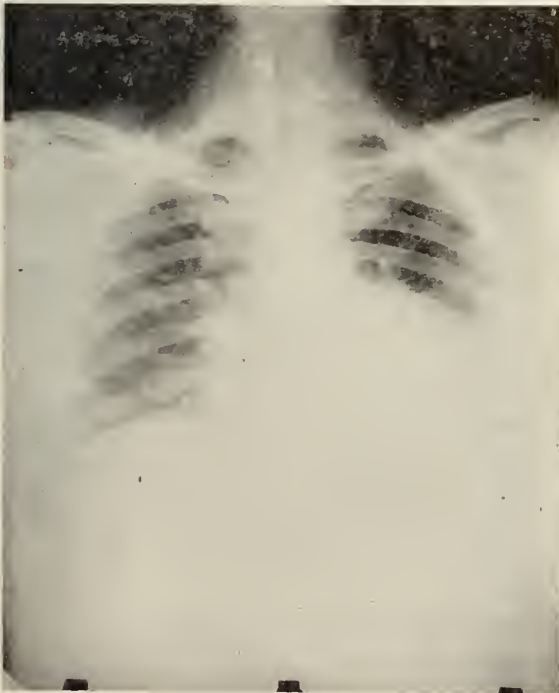
(Fig. 3)

given. The next day the abdomen was softer, peristalsis was present, and breathing was better.

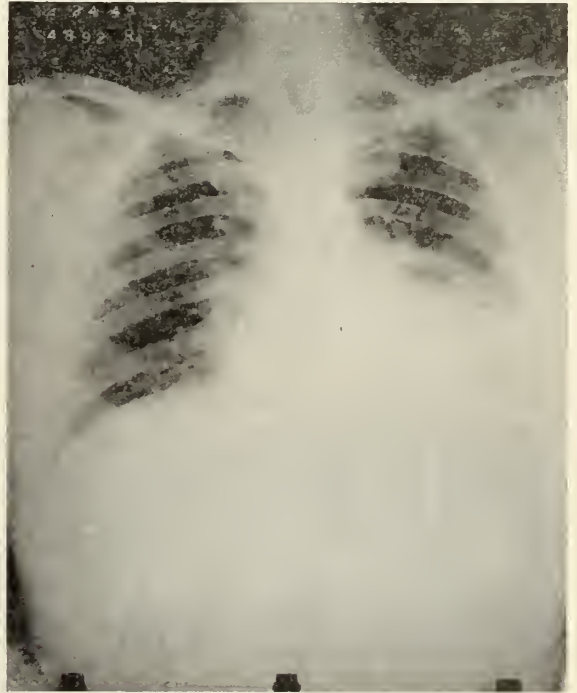
On December 9 thoracentesis yielded 510 cc. of amber, turbid serosanguineous fluid. *Proteus rettgeri* was recovered from cultures of this fluid. The next day the temperature did not rise above 99.6 F. and on December 11 it was normal (Fig. 3). The administration of streptomycin was discontinued and the dosage of penicillin was reduced to 300,000 units of aqueous procaine penicillin daily, although signs of fluid at the left pulmonary base were still present. The patient was still afebrile and there was evidence that the fluid in the chest was diminishing (Fig. 4). Therefore, on December 13 administration of penicillin was discontinued. On December 15, however, the patient complained of severe pain in the left lower portion of the chest and a friction rub was noted (Fig. 5). The administration of streptomycin (0.5 Gm. every eight hours) was begun and on December 16, in view of an elevated temperature and the fact that culture of the fluid from the chest revealed *proteus rettgeri*, even though streptomycin was being given, it was decided to begin giving the patient gantrisen. Accordingly, 1 Gm. was given hourly for four doses and this was followed by a main-

tenance dose of 1 Gm. every four hours.

On December 17, 360 cc. of seropurulent fluid were aspirated from the left side of the chest. The temperature thereafter rose above 99 F. only once. The second culture also revealed *proteus rettgeri*. In view of the patient's improvement, on December 20, the dosage of streptomycin was reduced to every twelve hours and of gantrisen to every six hours. Aspiration of the left side of the chest yielded 150 cc. of seropurulent fluid. Because of mental depression and because the temperature was normal, the patient was permitted to go home with instructions to take gantrisen (1 Gm.) and chloromycetin (0.5 Gm.) every six hours. However, because of severe pain in the chest (Fig. 6) and



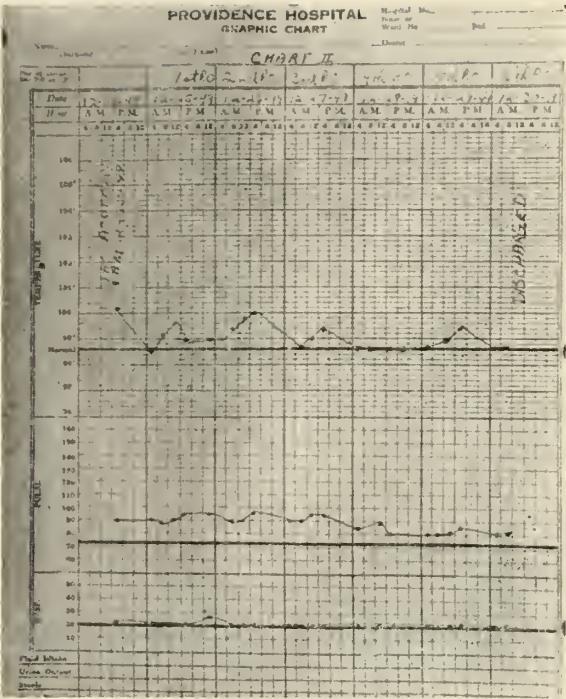
(Fig. 5)



(Fig. 6)

elevation of temperature, the patient was readmitted on Christmas Eve and thoracotomy done. While at home the patient had continued to receive gantrisen and chloromycetin. His mental condition and appetite did not improve.

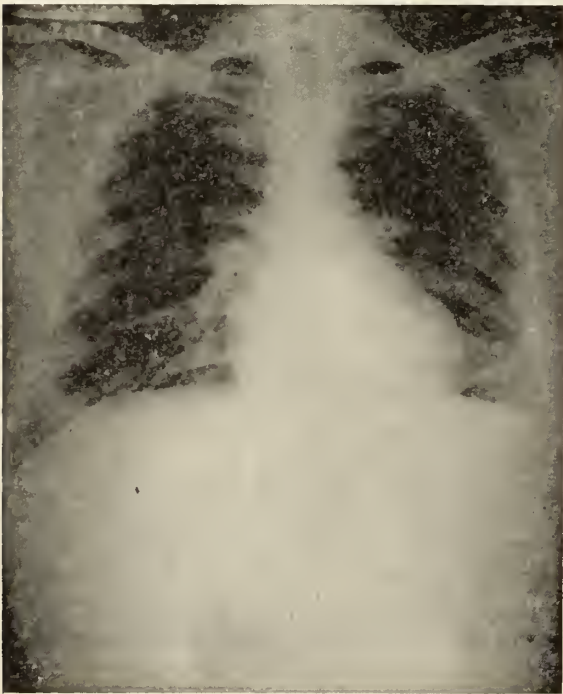
Following thoracotomy, the administration of chloromycetin and gantrisen was continued and 400,000 units of fortified aqueous procaine penicillin were given every twelve hours. By December 27 the tube was no longer draining and was removed. After December 27, the patient was virtually afeb-



(Fig. 7)

rile (Fig. 7). On December 28, the dosage of gantrisen was increased to 2 Gm. every six hours, and on December 29 the dosage of chloromycetin was reduced to 250 mg. every six hours. The patient was discharged on this dosage.

On January 7, 1950 all medication except



(Fig. 8)

vitamins was discontinued. While at home the pain in the left side of the chest persisted but evidence of diminished breath sounds, diminished vocal resonance and dullness gradually decreased. The pain became less severe until it virtually disappeared.

The patient has had no further difficulty and apparently is perfectly well. The last roentgenogram of the chest (Fig. 8), February 28, 1950, showed complete disappearance of the fluid in the left hemithorax. Some residual pleural thickening remained. A pleuropericardial adhesion was present. Prominence of the upper portion of the left ventricle was noted.

DISCUSSION

No explanation can be offered for the source of the proteus rettgeri infection in this case, although it was without doubt closely associated with the gastric operation. Taylor,² who reported 53 strains of proteus recovered from human sources, of which 22 were pathogenic, 24 non-pathogenic and 7 doubtful, concluded that in man *Bacillus proteus* may produce severe infection or exist as a harmless saprophyte in the tissues, body fluid or excreta. It seems fair to assume that surgical trauma could lead to these organisms becoming pathogenic.

It should be pointed out that while the patient was receiving streptomycin proteus rettgeri was cultured from the empyema fluid. Whether or not the gantrisen and chloromycetin were effective is not definitely known. *Proteus rettgeri* was recovered from a culture made after the patient had received approximately 10 Gm. of gantrisen in 24 hours. At this time the patient had also received streptomycin (0.5 Gm. every eight hours for two days). Unfortunately cultures were not made while the patient was receiving chloromycetin or at the time of thoracotomy. The fact is evident, however, that the patient continued to have fever while taking the drugs and until thoracotomy was done. The rapid subsidence of the infection following thoracotomy and the absence of any drainage after only twenty-four hours suggest that chloromycetin either itself or in combination with gantrisen was helpful in eradicating the infection.

2. Taylor, J. F.: *Bacillus Proteus* Infections, J. Path. & Bact. 31: 897-915 (Oct.) 1928.

McKee³ reported recovery following administration of sulfapyridine in a case of proteus septicemia. In a review of the literature he collected 18 cases of proteus meningitis with recovery in 4; sulfapyridine proved effective in one case and sulfanilamide in another. Surprisingly enough, sulfanilamide was ineffective in the former and sulfapyridine was ineffective in the latter. It is of interest that in 1932, long before the advent of antibiotics, Paryzek and Ecker⁴ reported recovery in a case of *B. proteus mirabilis* septicemia.

The unusual etiology of the empyema in the case herein reported should be a stimulus to greater effort on the part of the clinician to establish the etiology of all cases of pneumonia and empyema. Because of the specificity of presently available antibiotics, determination of the definite etiologic agent in every infection becomes increasingly important. The urologist has long been aware

of the need for identifying the bacterial agent in urinary infections. The internist would do well to follow his example.

SUMMARY

A case of proteus rettgeri empyema with recovery is reported. No other case of empyema due to *Bacillus proteus* was found in the literature. Culture of the empyema fluid while the patient was receiving therapeutic doses of streptomycin revealed proteus rettgeri. Gantrisen alone was of doubtful value. Chloromycetin alone or in combination with gantrisen was probably beneficial, although thoracotomy was required.

3. McKee, T. L.: *Bacillus Proteus* Infection; Review of the Literature and Report of Case of Septicemia of Otitic Origin Treated with Sulfapyridine with Recovery, *Arch. Otolaryng.* 39: 398-402 (May) 1944.

4. Paryzek, H. V., and Ecker, E. E.: *Bacillus Proteus* Septicemia with Recovery, *Am. J. M. Sc.* 184: 533-536 (Oct.) 1932.

PHYSICAL MEDICINE IN GENERAL PRACTICE

FERDINAND F. SCHWARTZ, A. B., B. S., M. D.

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The employment of physical medicine for the treatment of diseases and injuries has become a very important adjunct in the daily practice of medicine. The State of Alabama has observed its value in helping her citizens through the Vocational Rehabilitation Service to hasten convalescence and to restore the disabled to the community and to economical independence.

What is physical medicine? Physical medicine may be defined as the treatment of diseases and injury by means of physical agents such as heat, light, water, electricity, exercise, occupational therapy and rehabilitation. Today it is the responsibility of every practicing physician to know how to employ available facilities in helping his patients through the third phase of medicine that is physical medicine and rehabilitation. Physical agents must be prescribed just as judiciously as antibiotics in medicine and technics in surgical procedures. The most commonly

used physical agents in general practice are heat, light, water, ultraviolet rays and exercises.

HEAT

Heat may be applied locally by lamps, short wave, electric pads, moist compresses, paraffin and water. Regardless of which modality is employed, certain basic principles should be observed; namely, the condition of the patient, the pathology involved, age, temperature, distance, time element and sensitivity. The mazda CX type bulb is the most often employed light to give infrared therapy. It is not important to purchase an expensive type of stand for the bulb. A clamped reflector sold by any dealer in photographic supplies can be attached to the bed or table, vertically to the parts to be treated at 24 inches distance for 20 to 30 minutes. Heat must be carefully applied in peripheral vascular diseases and diabetes where the diseased blood vessels cannot take care of the increased circulation. Paraffin bath may be used for home treatments by placing 5 pounds of paraffin in the upper pan of a double boiler and water in the low-

Read before the Morgan County Medical Society at its 1950 meeting.

Assistant Clinical Professor of Medicine, Medical College of Alabama.

er pan. Heat the paraffin until all but one piece of paraffin is melted then allow the patient to dip his hand with fingers in abduction into the paraffin. Dip and remove the hand; repeat the process until a heavy glove is formed on the hand. After 30 minutes the paraffin can be peeled off and used over and over again.

Contrast baths are useful adjuncts in the management of arthritis at home. Two wash tubs are filled with water, one at 45 to 60 degrees F. and the other at 100 degrees. The patient immerses either the upper or lower extremity in the warm water for four minutes and then into the cold for one minute. Repeat the process six times, always ending with the warm water. Full baths are very relaxing to the patient, especially in neurotic individuals. The temperature best tolerated is between 92 to 94 degrees F.

In office practice, heat may be employed through short wave diathermy. Care must be observed in spacing the electrodes. Since one cannot estimate the amount of heat to be tolerated by the patient with short wave, the patient should be observed constantly. It is better to give too little than to burn the patient. The needle on the ammeter should be around 220 to 250 ma. and the initial time exposure ten minutes. No metal objects should be in the field of treatment, and neither the machine nor the patient should be near a steam pipe, water pipe or a radiator. The treatment table should not have a metal top, and the machine has to be grounded. There are a few contraindications to short wave therapy; namely, walled-in pus, malignancy, inflammatory conditions, and conditions where hemorrhage is a possibility. In pelvic treatments menstruation and pregnancy are contraindications.

ULTRAVIOLET RAYS

Ultraviolet rays are invisible and are known as chemical rays. They should never be prescribed carelessly for home use, in spite of the great pressure which is exerted by certain retail outlets. The minimal erythema dose should be ascertained in each individual case before therapy is applied. Then one-fourth of this amount is given as the initial dose of ultraviolet. The distance is 30 inches from the body, and both the doctor and the patient should use goggles to protect the eyes from the rays. The most

common indications for ultraviolet rays are sluggish ulcer, infected wound, psoriasis, furunculosis, and rickets. They are also used for their tonic effect. They are contraindicated in pulmonary tuberculosis, in all forms of generalized dermatitis, in itching dermatitis, and in diabetes, hyperthyroidism and nephritis.

PHYSICAL MEDICINE IN ARTHRITIS AND HEMIPLEGIA

For the sake of brevity, arthritis may be grouped under two broad headings: osteoarthritis and rheumatoid arthritis. Rheumatoid arthritis is a chronic, infectious, progressive, crippling disease, occurring usually between the ages of 20 and 40. At present there is no known single causative factor and hence no specific cure. The literature of the last twelve months has proposed several drugs for the management of rheumatoid arthritis. However, in the search for cure or amelioration of the symptoms, the prevention and the correction of the accompanying crippling deformities are neglected. Rheumatoid arthritis eventually will end in joint deformities in flexion; hence, it is of utmost importance to pay strict attention to the joints even though the latest panacea is available. The patient should have rest in order to avoid strain on the joints, in a non-sagging bed, and the joints in maximum extension. The feet should have no pillows under them, but there should be a foot board against the feet, with sand bags laterally to prevent eversion, and a removable posterior splint. The arms are to be in full extension, with the palms up and supported on small pillows. Large bulky pillows are very uncomfortable for the patient and will increase neck flexion, especially if the cervical vertebrae are involved. Therefore, a small pillow should be placed under the neck and in between the shoulders. When the patient becomes ambulatory, canes and bedroom slippers are to be avoided in order to maintain proper body balance and body mechanics. Crutches and a well fitted pair of shoes will maintain good posture for the patient. A chair with a high seat should be provided for the patient, together with a block under the chair so that he may get out of the chair without strain; and so that the feet may rest flat on the floor without undue flexion on the knee joints. Since the deformity takes place in flexion, the extensor muscle

groups have to be developed, and exercises must be carefully and accurately prescribed. In addition, to carry the joints through the range of motions, muscle tensing exercises must be prescribed, such as the quadriceps setting exercise. All exercises are to be performed slowly and rhythmically, with complete relaxation in between the exercises. In the acute inflammatory stage, exercises should not be performed. It is a good policy to start the exercises about two times at one session, repeated every four hours if no pain develops; then gradually add one more daily. Breathing exercises should be a part of the regimen since they promote expansion and ventilation of the thoracic cavity.

BASIC EXERCISES FOR RHEUMATOID ARTHRITIS

Lying on the back: breathing exercise—hold the chest expansion until the count of five then exhale. Contract the abdominal wall and hold the abdomen flat while breathing naturally.

Extend and flex the wrist on a small pillow under the wrist, abduct and adduct the fingers. Place the thumb over the tip of each finger.

Extend and flex the elbow joint by resting the upper arm against the bed. Raise the arm away from the body and then back to the midline. Raise the arm forward and upward.

Flex and extend the feet with the toes curled over. Pull the leg away from the midline then pull back toward the midline.

Tighten the muscles of the thigh. Hold for the count of five and relax. Knees bent, feet on the bed, raise the knees toward the chest, raise the feet and straighten the knees.

Keeping the shoulders flat on the bed, turn the cheek toward the bed; alternate cheeks. Flatten the neck by making a double chin.

Touch the right thigh with the left hand and the left thigh with the right hand, reaching down the thigh as far as possible without pain.

The above exercises should be preceded by infrared light for twenty minutes. After the exercises a gentle rhythmic massage is to be given, using mineral oil and alcohol

over the parts. However, massage should never be used over joints. In rheumatoid spondylitis, exercises are very important in order to maintain an erect and normal posture. Yes, it is known that fusion of the vertebrae is taking place but is it not a fact that fusion could be accomplished by nature in an erect position just as well as in a forward flexed position? The patient should be instructed in abdominal, deep breathing and postural exercises to be performed regularly at home.

OSTEOARTHRITIS

Osteoarthritis is a degenerative disease occurring usually above the age of 40. Most commonly involved are the interphalangeal joints of the hands, the knee joints, the sacroiliac joints, and the cervical, dorsal and lumbar vertebrae. Constitutional symptoms are usually absent and the disease is not crippling. The accompanying pains the patient complains of are due to muscle spasm and to undue stress and strain placed upon the body. Therefore, in the management of osteoarthritis, particular attention should be paid to posture, occupation, and obesity, and the walking and sleeping habits of the patient. Heat, in the form of infrared lamp, baker, or short wave in the office, will relax the muscles. The heat should be followed by massage and postural exercise, especially if the spine is involved.

Of course, as in rheumatoid arthritis, there is no cure to be offered the patient but at least one can make his life more comfortable so that he can live with himself rather than curtly dismiss him by stating "everybody has bone changes after the age of 40." By doing something for the patient, mental and physical deterioration will be prevented to a great degree.

In cervical arthritis, where many patients complain of headache and pain in the supraclavicular area and pain radiating toward the wrist, the judicious use of heat, massage, and neck exercise, together with stretching of the neck with a Sayre sling, will benefit the patient. It is important to instruct the patient to sleep without pillows or with only a small pillow under the neck and shoulders.

MANAGEMENT OF HEMIPLEGIA

It is estimated that over one million people suffer from hemiplegia in our country.

The residual effect of the disease is quite alarming if the patient has had improper care. The cardinal principles in the management of hemiplegia are the prevention of deformities, maintaining joint motions, maintaining or restoring muscle tone, and restoration of the patient to ambulation and to his daily activities. The position of the patient in bed is important. The mattress should be firm to maintain good posture; a foot board should be used to prevent foot drop, and long sand bags should be provided to prevent outward rotation of the legs. Further, there should be a small pillow in the axilla to prevent adductor contracture, and a small pillow under the head and shoulders to prevent bad head position. At first, gentle passive exercise should be given to the affected parts. Later on, active assistive and finally active exercises are to be engaged in. A pulley should be attached to the foot of the bed so the patient may exercise the shoulders and pull himself up to a sitting position. Active exercise to the facial muscles should be instituted by having the patient blow, pucker the lips, close the eyes, open and close the mouth, grind the teeth, and protrude and then withdraw the tongue. As soon as it is permissible the patient should sit up in bed to reestablish balance; then sit on the edge of the bed with the feet resting on a stool. Self care, such as washing the face, feeding himself and shaving, can be started as soon as the patient can sit up. When the patient is ready for rehabilitation, parallel bars, walkers and crutch training should be started. A short leg brace for feet drop will aid in ambulation. Speech therapy should be referred to a speech pathologist so that the patient's need can be understood. Occupational therapy will greatly help the patient's idle moments and prevent worries and procrastination.

SUMMARY

1. It is the duty of every practicing physician to help to prevent crippling deformities in patients and restore them to their former capacities or modified capacities to perform work.

2. Physical medicine, carefully applied, will hasten recovery and prevent mental deterioration.

3. Movement is life. These movements play an important part in the preservation

and restoration of muscular power, increasing circulation and increasing joint motions.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.
Gadsden, Alabama

Presented by

J. P. Puckett, Jr., M. D.
Amos C. Gipson, M. D.

This girl, five years of age, was doing well until six days before admission when a rash developed which the mother thought was German measles. Vomiting and fever were present at the onset.

The rash had disappeared and the temperature had returned to normal three days after the beginning of the symptoms. The following day she developed pain in the right foot. Twenty-four hours later there was swelling, tenderness, local heat, temperature of 103° and she refused to walk. The day of admission there was pain and tenderness in the left knee but no swelling. Headache had been present for 3 or 4 days.

Physical examination revealed a poorly nourished and developed child, acutely ill and in obvious pain. Both ankles were tender, swollen, hot to touch and had marked pain if moved. The left knee was tender and painful when moved but no swelling was present. A systolic murmur was heard over the precordium but not transmitted to the axilla or back. No enlargement was found from percussion.

Laboratory report: Hemoglobin 13.6 gm., red blood count 4,040,000, and white blood count 13,500, with 47% polymorphonuclear leucocytes, 45% lymphocytes and 8% eosinophils. Sedimentation rate: 87 mm. in one hour (Westergren); 52 mm. in one hour, corrected to 46 mm. (Wintrobe).

This was a typical case of acute rheumatic fever with polyarthritis and heart disease. Many cases of acute rheumatic fever have no joint symptoms.

Seven milligrams of ACTH were started every six hours. This had little effect on the fever; however, the swelling and tenderness of the ankles improved. Two days after admission, pain, tenderness and swelling developed in the right wrist. At this time the ACTH was increased to 10 mg. every 4

hours. The joint symptoms promptly subsided and the temperature returned to normal. This dosage was continued for the week she was hospitalized. Ten milligrams of ACTH were given daily for two weeks and salicylates three times daily.

Salicylates are often spoken of as specific antirheumatic drugs but there is no evidence that they influence the course of the disease itself. Given in sufficient dosage they will regularly abolish arthralgia; their antipyretic effect is also striking. An alkali such as potassium citrate or sodium bicarbonate should be given in equal quantities to prevent acidosis and/or nausea.

Rheumatic disease is characterized by widespread inflammatory and proliferative changes in the mesodermal structures; its manifestations may be acute, subacute or chronic. Because of the frequency with which it damages the heart, the disease ranks high as a cause of death in childhood and adult life. Other major manifestations are polyarthritis, chorea and subcutaneous fibroid nodules.

A patient may have rheumatic fever or chorea without heart involvement but if he has both he is almost certain to have rheumatic heart disease.

The results to date in the use of ACTH in acute rheumatic fever are among the most optimistic in the collagen disease group in that relatively small doses, over relatively short periods of time, have caused a reversal of the clinical disease in most cases and have blocked the severe heart disease that is usually associated with recurrent attacks of acute rheumatic fever. By far the best results have been in acute first or second attacks of rheumatic fever in individuals with no evidence of previous heart damage.

The sedimentation rate is a very valuable aid in the diagnosis of acute rheumatic fever without joint symptoms, as we feel this diagnosis with a normal sedimentation rate is almost untenable.

The necessity of professional consideration of the personal problems of tuberculosis patients has become generally recognized as an essential part of their treatment and as a means of preventing them from leaving the hospital against medical advice.—*G. Canby Robinson, M. D., Bull. Johns Hopkins Hosp., April 1951.*

Allergic Disease—The diagnosis of dust or other pollen sensitivity is made historically but confirmation is made by skin test. This is easiest and most reliably performed by application of a solution of the suspected offender to a small scratch on the forearm. Treatment consists of frequent subcutaneous injections of the offending substance, beginning with a very small dilution and gradually increasing to tolerance over a period of months. Results are most gratifying, even though a graded series of injections may have to be repeated after a year or so. It must be said in fairness that there are no comparable series of untreated cases so that how far we exceed the spontaneous remission rate is mere conjecture. But even were this a pure psychic phenomenon the satisfaction obtained justifies the continuance of the method.

From the practical standpoint, I would suggest that anyone who faces this class of patients obtain stock solutions of house dust, ragweed, pecan, timothy, and sycamore. From these, confirmatory scratch tests can be done, and dilutions prepared for treatment.

It must be emphasized that in allergies, as in any disease process, the patient must be considered as an individual and his disease as the only one of its kind. In an attempt to disclaim stereotyped procedure two examples are mentioned: There is a type of asthma which has its inception in late middle age, which is slowly progressive and intractable to usual methods of treatment. This has been characterized by some as intrinsic, or bacterial asthma. Proof of the bacterial relationship is lacking. A few of these have been found to have polyarteritis nodosa, and possibly many of them do. But the fact remains that many of these people have constant disabling asthma, become debilitated, and rather soon die, if not as a result of this disease at least with this disease as a major contributing factor. And our present state of allergic knowledge remains powerless to explain or to contribute a great deal to their comfort or longevity.

Then there is a group of people who live south of the Mason and Dixon line who are consistently bothered with hay fever symptoms in the summer, and who are not clinically or by skin or laboratory tests sensitive to the seasonal pollens. Luckily, they almost all are relieved by antihistamine drugs, but the allergic nature of their disease remains unknown.

We are extremely fortunate that processes manifesting themselves as allergic diseases are so often so easy to elucidate, and that if the proper procedures are followed the overwhelming majority of them will rather quickly and easily respond to treatment.—*Cook, J. M. A. Georgia, June 1951.*

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CIVILIAN MEDICAL CARE FOR ARMY PERSONNEL

This fact sheet outlines the current policy on authorization and payment for civilian medical care rendered to Army personnel while on approved leave or duty status in vicinities where federal hospital facilities are not available.

One of the most important and necessary services furnished the American soldier is adequate and timely medical care and treatment, including hospitalization. This service is provided for Army personnel in the United States generally by dispensaries, infirmaries, and hospitals located at the many Army installations throughout the country. There are many locations, however, where Army or other United States federal medical treatment facilities are not available when medical service is required by Army personnel. In cases of this nature, the services of civilian physicians, clinics, and hospitals are necessary. With the expansion of the Army and the deployment of Army personnel to practically all points in the United States either on a duty, travel, or leave status, the continued cooperation of civilian physicians and agencies is of utmost importance in providing adequate medical service to the U. S. soldier in time of need.

Certain criteria and procedures have been established in connection with the furnishing of medical service to Army personnel by civilians in accordance with the current laws and regulations. These criteria define the conditions under which individuals of the Army may be authorized civilian medical care at the expense of the Army. These procedures include methods for reporting and receiving payment for treatment or hospitalization of Army personnel by civilian medical agencies.

Civilian medical care (other than elective) at the expense of the Army is authorized for commissioned officers, contract surgeons when employed by the Army on a full-time basis, warrant officers, enlisted personnel, cadets of the United States Military Academy, general prisoners and prisoners of war when these personnel are on a duty status or when they are absent from their place of duty, on leave or informal leave (pass) status. Applicants for enlistment in the Army and selectees also are authorized necessary civilian medical care

at the expense of Army funds while they are being processed for enlistment or induction into the Army. Payment for civilian medical expenses incurred by Army personnel who are absent without leave is not authorized. Any obligations resulting from civilian medical care to Army personnel who are absent without leave are the responsibility of the Army individual concerned.

Normally, civilian medical care for Army personnel is authorized only when there are no other federal medical treatment facilities available. First aid or emergency treatment is authorized at any time, notwithstanding the proximity of Army or other federal medical treatment facilities. In this connection, emergency medical care may be defined as that required to save life, limb, or prevent great suffering. Surgical operations should not be performed without prior approval of military authorities, unless indicated as an emergency procedure. Elective medical treatment in civilian medical treatment facilities or by civilian physicians will not be authorized as Army funds cannot be used for payment of these services.

Due to limitation of funds available to the Army, medical care of dependents of military personnel from civilian sources, at Army expense, is *not* authorized. Dependents of military personnel may obtain available medical care at Department of Defense medical facilities only. Any obligations resulting from civilian medical care to dependents of military personnel are the responsibility of the dependents concerned or their sponsors.

As a general rule, local military commanders will furnish the civilian medical agency with prior written authority for ordinary medical care to Army personnel under his jurisdiction. In such cases, prior arrangements with the civilian medical agency will be made by the individual or by a proper military authority. For emergency cases treated without prior written authorization, the surgeon of the nearest military command should immediately be notified by the civilian medical agency, giving the individual's name, organization, nature of illness or injury and statement of the practicability of transfer of the patient to an Army or other governmental hospital. The civilian agency or physician then will be advised

without delay by the appropriate military authorities as to procedures to be followed.

Bills for authorized medical care and treatment of Army personnel should be submitted to the commanding officer of the organization to which the patient belongs, or to the military authority who provided the authorization for the medical service. If the location of these individuals is not readily known or if such military commanders authorizing treatment have moved to another station, the bill should be sent to The Surgeon, Third Army, Fort McPherson, Ga.

The bill should show the full name, rank, and service number of the patient, place, and inclusive dates of treatment, diagnosis, and charges, all itemized separately. The duty status of the patient at the time of illness or injury also should be shown, such as duty, leave, or pass. Payment will be expedited if the following certificate is typed on the bill and signed:

"I certify that the above charges are correct and just; that payment therefor has not been received; that the services were necessary in the care and treatment of the person named above; that the services were rendered as stated; and that the charges do not exceed those customarily charged in this vicinity."

(Signature of Payee) (Title or Capacity)

Answers to specific questions or further information concerning this matter may be requested of the military surgeon at the above address or from The Surgeon General, Department of the Army, Washington 25, D. C. Any difficulties that are experienced should be called to the attention of these Army authorities in order that this program may function smoothly and render the American soldier the prompt and adequate care and treatment to which he is entitled.

ANOTHER ANALGESIC

"This clinical study was undertaken to evaluate the analgesic effectiveness of Nu-2206 and compare it with others commonly employed for this purpose. The need for better analgesia is universally recognized since drugs presently prescribed often only partially control pain (Demerol), frequently create undesirable side reactions as nausea, vomiting, respiratory depression, etc. (morphine), and are frequently short acting."

The above is the opening paragraph of the study of Dromoran or NU-2206 published by Curreri, Gale, and Dickie.¹ The Wisconsin investigators' series included a total of 67 patients, all of whom had undergone thoracic surgery. While no sweeping conclusions can be drawn from a small number of cases limited to only one field, nevertheless the results found by the three observers are most interesting and highly provocative. The authors found that "Demerol was disappointing. It proved quite ineffective in overcoming postoperative pain." And "only rarely will the drug be effective for as long as 5 hours." We are told that "in general, Dilaudid was superior to Demerol, producing moderate to complete analgesia for 3 to 3½ hours. During the period of analgesia the patient's apprehension disappeared and was replaced by a feeling of relaxation, which rarely occurred with Demerol."

We are further told that "Nu-2206 proved to be an extremely effective analgesic with a longer period of action. Average analgesia was for 7 hours, representing approximately twice the duration of Dilaudid and three times that of Demerol. As a rule, pain relief was complete and patients cooperated readily in undertaking their exercises. Patients with previous experiences in other pain relieving drugs following chest surgery emphasized this drug gave faster, longer, and more complete relief than any other they had received."

The three thoracic surgeons tell us that "Nu-2206 is effective within 10 to 30 minutes following administration. The return of pain is gradual so that patients frequently are able to tolerate the discomfort for an additional 2 to 4 hours before requesting another hypodermic. This prolonged and complete analgesia not only aided in preventing complications because of the patients' cooperation but it also saved considerable time for the nursing staff. This time-saving factor is significant with the present nursing shortage."

And we are also told that "this drug has an action similar to other narcotics, producing respiratory depression if no pain is present." Very few complications were observed. Two

patients suffered from nausea and vomiting which was attributed to the drug, and in one patient the respiratory rate dropped to 14 per minute. "At no time did such disturbing untoward effects as leucopenia, sensitivity reactions, or shock develop." And we read the following highly significant statement: "It has been shown elsewhere that because it has a wide margin of safety Nu-2206 is a safe drug to use clinically." The investigators conclude with a warning that they have been notified by the Bureau of Narcotics that Dromoran is to be labelled as an addiction-forming drug similar to morphine and as an opiate.

It is certainly to be hoped that the studies of Curreri, Gale, and Dickie will be extended and confirmed by other observers in many and various fields. Despite the many analgesics now available it is a tribute to the essentially progressive spirit of modern medicine that efforts are constantly being made to find newer, safer, and better ones.

Intestinal Obstruction—Intestinal obstruction is of paramount importance to the physician and surgeon alike. One who is confronted with a patient with acute abdominal pain and acute constipation, nausea and vomiting, and with high-pitched tinkling sounds and audible peristalsis, must alert himself to the many conditions that produce one or more of these symptoms. However, when these symptoms are noted, obstruction must receive first consideration and prompt treatment must be instituted. In less acute cases, more time can be taken for a more complete study. In the proper approach to these cases, sign posts may be noted which could lead to the diagnosis of many conditions. Following a careful history and physical examination, other studies should be made, including blood and urine examinations. A scout film or flat plate of the abdomen may reveal a dilated, ballooned colon so characteristic of a volvulus and the diagnosis can be confirmed by a barium enema; or it may show fluid levels or stepladder dilatations, presenting the characteristic bowel pattern of small bowel obstruction; or viscera may be found in the chest, indicating a diaphragmatic hernia. If these are not observed, suggesting an obstruction, calciferous deposits may be seen in a dermoid cyst of the ovary or fibroid uterus, or shadows may be seen suggesting a fecalith in the appendix or stones in the biliary or genito-urinary tract which may lead to the correct diagnosis. Gas shadows under the diaphragm in a patient with abdominal pain, associated with shoulder pain, will confirm the diagnosis of a perforated peptic ulcer. Blood and urine studies may reveal findings suggestive of certain constitutional diseases of interest to the internist and may assist the surgeon in evaluating the risk.—*Putney, Virginia M. Monthly, July '51.*

1. Curreri, A. R.; Gale, J. W., and Dickie, H. A.: Effectiveness of Dromoran (3-Hydroxy-N-Methyl Morphinan) as an Analgesic in Thoracic Surgery, *J. Thoracic Surg.* 20: 90 (July) 1950.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

OUR STATE HOSPITALS HEALING INSTITUTIONS

*Reprinted from The Tuscaloosa News,
June 20, 1951*

"I believe today at Bryce Hospital we can offer you as modern and as effective treatment for mental illness as can be secured at any private institution in the Southern States," said Dr. J. S. Tarwater in an address to the Tuscaloosa Rotary Club. This highly significant statement from the superintendent of the Alabama State Hospitals was incorporated in an enlightening discussion of these state institutions for care of the mentally ill; including Bryce Hospital, Partlow State School for the feeble-minded; and Searcy Hospital for Negroes (Mount Vernon, near Mobile).

Dr. Tarwater's message, one of a Rotary series dealing with local institutions, revealed points deserving of general attention on the part of Alabama's people. Here are some of them:

There are still many public misconceptions about the state's mental institutions. Care and treatment of the mentally ill are traditionally functions of the state. Bryce Hospital now has 4,700 men and women, Partlow School about 1,250 children who are mental defectives due to hereditary factors or early brain changes; and Searcy Hospital had 1,947 patients on Sept. 30, 1950, end of the fiscal year.

Commitment to the state hospitals is on order of the probate judge, who issues the order after a physician's statement is filed, and notice has been received that a place exists at the hospital for the patient. There were 2,700 admissions in 1950.

Last year the population, as of Sept. 30, increased 231, there being 2,172 patients released on trial or permanently, and 388 deaths. Many people at the hospitals are quite old, bed-ridden and senile, up to 80 and 90 years. Several patients have died within a few days of arrival, and one was dead on reaching the hospital.

With hospital population constantly growing, there is need for a continuous building program. Effective June 1, 1950, it was impossible to admit immediately white women patients, and probate judges were notified a waiting list was being established. Nearing completion is a unit to care for 125 white women, but the waiting list will probably fill that immediately in August and September.

The state appropriation is \$10 a week per patient, (\$1.43 a day), but the Legislature has indicated this will be increased to \$11 at its present session. Prior to last September it was \$9, being subjected to a 10 per cent cut in the latter days of the Folsom administration. Earlier that administration had increased the appropriation considerably.

This \$10 per week must care for all expenses, except construction. It pays 750 employees, including medical staff, affords maintenance, treatment, food, clothing for 60 per cent of the patients, equipment, etc. Last year state appropriations totaled \$3,750,000 and the hospitals received \$360,000 in produce from its farms. There were also 215 "pay patients" in the hospitals, for whom relatives or other sources paid \$43.35 a month.

Alabama citizens have developed a new viewpoint toward the hospitals in the last generation. Once there was a "hopeless attitude" in the mistaken idea that a person necessarily was being committed "for life." Many of them do remain for years, 30 to 35 or more, but thousands are treated and restored to useful pursuits. This has brought public realization that the hospitals are "for treatment" and not merely "for custody."

A good many new things have been done at Bryce Hospital to improve treatment. The hospital has full-time occupational and recreational therapists, and with the aid of various organizations, especially women's groups, conducts shows, parties, and even swimming periods for patients.

Recently started was a teaching program

for attendants, and several weeks ago Bryce Hospital opened an "affiliate nursing school" which makes it unnecessary for Alabama student nurses to go elsewhere and take their required three-month course in psychiatric nursing.

The Bryce Hospital policy is to give complete examinations to all men and women patients admitted. There are special "receiving buildings" for this purpose. On admission, the patient's case is carefully worked up from both the mental and physical standpoint. Surgical treatment can be provided if indicated. Physicians run into all types of diseases, and treat them in the most modern manner.

The hospital is prepared to administer occupational therapy, shock therapy, psychotherapy and also psychosurgery when desired by the family.

Naturally, limited funds make it impossible to do many things the state hospitals would like to do, to improve treatment, provide additional buildings, increase wages and otherwise better the service. The hospitals and their personnel are determined to carry on their assigned function to the utmost of human ability, with the realization that an understanding and appreciative Alabama citizenry will see to it that support is forthcoming, concluded the superintendent.

Dr. Tarwater was introduced by Dr. Harvey B. Searcy, long secretary of the Alabama State Hospitals' Board of Trustees, and son of a one-time superintendent. Dr. Searcy, presented by Program Chairman James Chancey, pointed to a fact which has helped make Bryce Hospital an outstanding mental institution in the U. S. A. for almost 100 years.

He said there have been only four superintendents: Dr. Peter Bryce, 32 years; Dr. James T. Searcy, 27 years; Dr. William D. Partlow, 30 years; and now Dr. Tarwater, who became superintendent several years ago after 20 years on the staff.

Superintendents are appointed by a self-perpetuating board of trustees, of which the governor is an ex-officio member. Unlike almost all other state hospitals in the nation, the superintendency does not change when a new governor is elected, and there are no "politics" in the hospitals' administration.

It is therefore possible to have a superintendent like Dr. J. Sidney Tarwater; born in Walker County; a coal miner as a youth who earned enough to educate himself in the medical profession; and came to Bryce Hospital as an intern in 1924.

Upon such solid rocks of principle and person has been built the Alabama State Hospitals' system.

ITEMIZE IT

W. A. Dozier, Jr.

Director of Public Relations

Over a period of some time now various aspects of the total picture of good public relations have been discussed and exemplified in this column. Perhaps some of the points have made an impression; perhaps many have not. Some of the ideas which from time to time have been put forward were not applicable to every physician, for some of them were designed to touch only a segment of the group. However, "Itemize It" should be considered by all. Itemize what? Your statements which you send to your patients.

"But why," you ask, "should my secretary have to assume the additional duties which would be necessary not only in making out the statements but in keeping the records?"

Put yourself in your patient's shoes. Assume that you have taken your automobile to the shop for a thorough check. You know that the car got a shot of grease and some new oil and that a bolt or two were tightened. At the end of the month, however, you get a bill for thirty dollars. The statement merely says "Services . . . \$30.00." How would you feel? The chances are your reaction would be the same as that of one of your patients who gets a statement saying "Professional Services . . . \$20.00," and frankly your reaction would be legitimate as would be that of the above-mentioned patient.

It is true that you might contend the analogy above is not applicable. After all, the patient has been present while receiving the services; and you were not when the auto was checked. To a certain extent such a contention is true, but the patient does not follow a specimen through your laboratory. Of even more importance, though, is the

fact that being present and understanding what is happening are two distinct and separate things. To most people who enter a physician's office that which goes on is about as meaningful as the theory of relativity. And nine times out of ten the patient is too sick or too frightened to care very much; his only thought is for relief or escape.

If you consider the situation for a minute, you can readily see that, although itemizing a statement will take more time and effort, it will keep a patient from feeling as if he has been gouged. It is this very feeling of dissatisfaction that one must attempt to eradicate.

So many physicians in your Association have said "We get blamed for the whole bill even though our services constitute a minor portion of the total charge." Is not a great portion of this blame due to your failure to itemize your bill?

It has also been argued that anyone who

does not understand the charges or who is dissatisfied can settle it with one telephone call to the office. True. Some of your patients probably do just that; but those who do not are the ones who will cause the trouble, do the grumbling, and add to the flames that some people fan in an effort to place the profession in disrepute. It is this group of disgruntled persons who have to be catered to so as to keep down criticism.

And finally it has been said that this group is made of malcontents who will never be satisfied. That statement may be partially true also. But can you honestly say that you have done your utmost to protect the good name of your profession until you have done all within reason to keep down criticism? Does it not seem logical that "buying a pig in a poke" can and very often does give rise to feelings of antipathy? Would not the additional time and effort be worth while if only a few misconceptions were stopped before they began?

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

FIGHT POLIOMYELITIS WITH KNOWLEDGE

As public health workers and doctors frequently remind you, poliomyelitis is essentially a warm-weather disease. But, as they also remind you, it is a year-round disease. So we need to keep on the lookout for it from year's end to year's end.

Perhaps the best and most practical way you can avoid having this disease yourself or seeing your child become a victim is to find out as much as you can about it. Such knowledge should enable you to recognize it early, when there is the best chance of obtaining a complete cure and avoiding crippling and deformity. It should enable you to face the possibility of having to deal with poliomyelitis—in yourself or someone else—without exaggerated fears. Such knowledge should make it possible for you to face the actual presence of the disease without hysteria. It should make you or your child a

better, more cooperative patient. It, in brief, should make for greater wisdom in dealing with poliomyelitis. That is true whether you know it only as a possibility or as an actuality.

Let us, then, ask and answer a few questions having to do with this disease.

1. What can be done to protect a child against poliomyelitis?

The answer to this, unfortunately, is not a particularly satisfactory one. Nor is it very informative. The sad truth is that not much can be done to give anyone protection against poliomyelitis. However, it is possible to improve a youngster's chance of avoiding exposure to the virus which causes the disease. For one thing, he can be kept in the best possible general health. He can be required, under the pressure of parental discipline, to observe the usual hygienic and sanitary procedures. And of course one can, and should, avoid all unnecessary exposure. That applies especially to physical association with those who have poliomyelitis.

2. How can the average person tell whether a child has or does not have the disease?

The answer is that he or she can't. There are some definite symptoms of course. But they are not likely to be noticed by another child. About the best rule to follow about exposure is to be careful, especially during an epidemic. This does not mean keeping a child cooped up all the time, afraid to let him get out of the house or the yard. It means using plenty of good common sense. It would certainly be foolish to allow a child to play with another child who is suspected of having this disease. A parent should be careful about letting a child play with strangers. It is especially dangerous to become chummy with another youngster from a place where there is, or recently has been, an outbreak of poliomyelitis.

3. What are the usual symptoms of poliomyelitis?

There are a number of them. Some may be present at one time, others at other times. Some may not be present at all. But here are the changes to look for: upset stomach; headache; sore throat; a rise in body temperature that cannot be explained in any other way; a change in the bowel habits; fatigue, or prolonged tiredness, not relieved by rest; lack of interest in other people or in normal activities; irritability, or a tendency to complain or find fault with others; nervousness; trembling of the hand, or less commonly, other parts of the body; muscle pain, especially in the neck or back; and stiffness, also in the neck and back.

4. Is one safe in assuming that a child without any of these symptoms does not have the disease?

No. Such an assumption is not absolutely safe. For a large number of cases do not produce any symptoms at all. In fact, many of those who have this type of poliomyelitis never know there is anything wrong with them. They feel and act like other normal people. Some go on and develop the other kind, with the usual symptoms. Others, however, recover—if that is the word, considering that they have never been sick in the usual sense of the term—without knowing they have had poliomyelitis.

5. How many cases of that kind occur in the course of a year?

Nobody knows exactly, of course, for

there is no way of getting accurate figures on anything that exists without being recognized. Finding out the number of cases of unrecognized poliomyelitis would be about like finding out the number of undiscovered traffic law violations. But we do have estimates. And they come from the best possible source. The National Foundation for Infantile Paralysis estimates that there are at least ten unrecognized cases for every case that is recognized and entered upon the epidemiologic records. The 1950 total of reported cases for continental United States was 33,202. The Alabama total for that year was 281. Applying that ten-to-one yardstick, we find that there must have been nearly a third of a million unknown cases in the United States that year. The Alabama total of unknown cases must have been above 2,800.

But even the National Foundation for Infantile Paralysis freely concedes that its estimate is little more than an intelligent guess. It even goes so far as to say that unrecognized cases may outnumber recognized cases at the rate of 100 to one. But, whether the correct ratio (if we could find it) is ten to one or 100 to one, we have to face the fact that unrecognized cases actually occur among a considerable proportion of our population. That is especially true of our young people.

6. How dangerous are those symptomless, unrecognized poliomyelitis cases?

They are as dangerous as the recognized ones. They carry the virus. The victims' bodies serve as reproducers of other viruses. These deadly and crippling organisms are discharged from the bodies of those without symptoms in the same way as from the bodies of patients who are under treatment for the disease.

7. What effect do those unrecognized cases have upon the procedures to protect the general public against poliomyelitis?

They make those procedures more difficult. Or rather they make the protection of others more difficult. For they make the fight against spread of the disease largely a fight in the dark. It is hard, not to say impossible, to avoid people with poliomyelitis—or people with any other disease, for that matter—when you know who only a small fraction of them are. That is largely

why less emphasis is being placed now than formerly upon keeping known cases away from other people.

8. Does that mean that parents should do nothing to keep their children away from other children believed likely to have poliomyelitis?

Not at all. Quite the contrary. The child known to have the disease, or strongly suspected of having it, is a definite and real danger. It is almost certain that he is capable of giving the disease, directly or indirectly, to others. The average child without symptoms of poliomyelitis, on the other hand, is only potentially capable of giving the disease to others. Even if there actually were 100 unrecognized Alabama cases in 1950 for every recognized case, that would mean only about 28,000 Alabama cases during that 12-month period. That's certainly a lot of cases. But that is less than one per cent of the state's total population. Broadly speaking, that means that a particular person you or your child happened to speak to or play with was about 100 times as likely not to have the disease as he was to have it. So the danger of infection is vastly greater from the known than from the unknown case.

9. How soon does poliomyelitis usually develop after exposure to the disease?

There is no hard-and-fast rule about that. The time between infection and illness varies from case to case. It may be as short as seven days. It may be as long as two weeks. Some cases have developed in three days. And there are records of others that waited 35 days. So don't be too happy because a certain number of days have passed since your child was exposed. You may find your happiness was based upon too weak a foundation. Naturally, however, it is encouraging to find that a child remains without symptoms 14 or more days after association with a victim of poliomyelitis.

10. How does a person get poliomyelitis from another person?

There is considerable difference of opinion among medical authorities on this. They will tell you frankly that they do not know as much about the mode of transmission as they'd like to. However, the National Foundation for Infantile Paralysis called attention some time ago to commonly held

theories regarding its spread. These theories involve discharges from the nose and throat, body discharges, or excreta, and the fly as a virus carrier. They are in agreement with medical opinion generally. They are also accepted by the public health agencies. There is little or no reason to think water, food or sewage plays any significant part, if any part at all, in the spread of poliomyelitis.

11. How long does a patient continue to harbor the poliomyelitis viruses?

They seem to appear early in some parts of the body. And they are present in some parts of the body after they have disappeared from other parts. In some cases studied, they have been found in the feces, or body discharges, as early as two weeks before the victims showed any symptoms. And they have been found in excreta over a period of several months. On the other hand, they have been found in the nose and throat for just a few days after the onset of the disease.

12. What is the dangerous age, as far as poliomyelitis is concerned?

To begin with, it should be emphasized that there is no such thing as an undangerous age. You are not entirely safe from poliomyelitis, no matter how young or how old you may be. The epidemiologic records of the State Department of Health include cases involving people of all ages, almost literally from the cradle to the grave. So do the records of other public health agencies. But the disease's second name, infantile paralysis, was well chosen. For this is primarily a disease of childhood. In Alabama and elsewhere, youngsters are its most likely victims. In the latest year for which we have reports, for example, nearly a sixth of all reported cases occurred among young babies under two years of age. More than half were under five.

13. How about tonsil and adenoid operations?

There is some disagreement among medical men about this. Most of them, however, advise parents to postpone this type of operation until after the "poliomyelitis season," especially if there has been a sharp upturn in cases. There is an inclination to include the pulling of teeth among the things it

would be well to postpone at such a time.

14. At what stage of the disease is the victim most likely to give it to others?

That danger appears to be greatest from the latter part of what is known as the incubation period until about the end of the first week of acute illness. Perhaps you find the expression "incubation period" confusing. It means that period between infection and the appearance of symptoms. Thus the period of greatest apparent communicability, as far as poliomyelitis is concerned, is from just before the appearance of the first symptoms until about a week after they appear.

15. Is there any means of obtaining immunity to poliomyelitis by vaccine?

Up to now, the answer to that has to be "No." You cannot be made safe against this disease in the same way that you can be protected against typhoid, smallpox, or diphtheria. How much longer we shall have to wait for such a great boon and blessing, nobody knows. But many hope it will not be so very long.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

May 1951

Examination for diphtheria bacilli and Vincent's	196
Agglutination tests (typhoid, Brill's and undulant fever)	1,190
Typhoid cultures (blood, feces and urine)	516
Examinations for malaria	317
Examinations for intestinal parasites	*6,853
Serologic tests for syphilis (blood and spinal fluid)	26,838
Darkfield examinations	7
Examinations for gonococci	2,087
Examinations for tubercle bacilli	3,567
Examinations for meningococci	2
Examinations for Negri bodies (microscopic)	119
Water examinations	1,663
Brucella cultures (blood)	19
Milk and dairy products examinations	4,407
Miscellaneous	1,549
Total	49,330

*This includes 3,023 examinations of hookworm surveys done the first five months of 1951.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1951

	April	May	E. E.* May
Typhoid and paratyphoid	7	10	6
Undulant fever	5	4	1
Meningitis	8	10	11
Scarlet fever	27	19	34
Whooping cough	148	253	133
Diphtheria	10	9	16
Tetanus	1	7	4
Tuberculosis	181	181	283
Tularemia	0	1	0
Amebic dysentery	6	1	1
Malaria	0	1	115
Influenza	2394	654	232
Smallpox	0	0	0
Measles	486	972	806
Poliomyelitis	7	8	4
Encephalitis	2	2	0
Chickenpox	274	210	193
Typhus	2	7	19
Mumps	226	181	168
Cancer	338	423	260
Pellagra	0	2	4
Pneumonia	359	182	255
Syphilis	279	228	1661
Chancroid	13	11	19
Gonorrhea	223	262	607
Rabies—Human cases	0	0	0
Positive animal heads	24	26	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

The State Psychiatric Hospital—One of our first jobs is to get the public behind us, not merely to fight so-called abuses, but to work for psychiatric ideals. We must open the doors of our psychiatric hospitals; invite the public to see and become a part of what we are trying to accomplish. To do this, we must overcome our own fear of criticism; indeed, we must welcome criticism and ask for assistance in solving the problems in which we, the patients, their families and the public in general are equally concerned. We must try to make our hospitals more closely approach normal communities; we must welcome friends and relatives and urge them to take part in hospital activities. And if friends and relatives sometimes upset the patient, we must teach both of them better techniques of interpersonal relationships. All too frequently we have kept friends and relatives away because of the additional burden they place on the staff. Instead, we must find ways to encourage friends and relatives to visit their hospital. We wish to make the mental hospital a place to which a sick person may adjust more easily on arrival, because it is not so different from any other hospital; and, because it is not different, the patient will have less difficulty in adjusting to family and community when he leaves the hospital. We want to bring the community to the hospital and make the hospital a part of the community. This is the open door principle, which, if followed, will greatly improve our mental hospitals and help secure the support we must have.—*Terhune, Connecticut M. J., July '51.*

DEPARTMENT OF HEALTH

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MARCH 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During March, 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births.....	6685	**	**	25.5	26.3	25.2
Total stillbirths.....	225	**	**	32.6	25.4	27.9
Deaths (stillbirths excluded).....	2567	1492	1075	9.8	9.5	9.5
Infant deaths:						
under one year.....	280	142	138	41.9	42.2	41.8
under one month.....	183	97	86	27.4	25.9	26.1
Cause of death.....						
Tuberculosis, 001-019.....	78	31	47	29.8	35.8	24.0
Syphilis, 020-029.....	9	1	8	3.4	8.1	7.8
Dysentery, 045-048.....	2	1	1	0.8	1.9	
Diphtheria, 055.....	1		1	0.4	0.4	0.4
Whooping cough, 056.....	3	3		1.1	0.4	0.8
Meningococcal infections, 057.....	3	3		1.1	1.2	0.8
Polioomyelitis, 080, 081.....	1	1		0.4		
Measles, 085.....	1		1	0.4	0.8	2.7
Malaria, 110-117.....						0.4
Malignant neoplasms, 140-200, 202, 203†.....	226	151	75	86.3	79.7	90.3
Diabetes mellitus, 260.....	36	24	12	13.8	9.6	13.2
Pellagra, 281.....	4	3	1	1.5	0.8	1.6
Vascular lesions of central nervous system, 330-334.....	316	175	141	120.7	102.7	108.9
Other diseases of nervous system, 300-318, 340-398.....	32	17	15	12.2	15.0	17.0
Rheumatic fever, 400- 402.....	8	2	6	3.1	1.2	2.3
Diseases of the heart, 410-443.....	736	467	269	281.2	275.9	288.4
Diseases of the arteries, 450-456.....	31	22	9	11.8	15.0	14.0
Other diseases of circulatory system, 444-447, 460-468.....	25	14	11	9.6	12.7	13.6
Influenza, 480-483.....	70	38	32	26.7	23.5	11.2
Pneumonia, 490-493.....	154	89	65	58.8	53.9	48.8
Bronchitis, 500-502.....	4	3	1	1.5	1.9	1.9
Appendicitis, 550-553.....	3	3		1.1	1.5	2.7
Intestinal obstruction and hernia, 560, 561, 570.....	5	2	3	1.9	5.8	2.7
Gastro-enteritis and colitis (under 2), 571.0, 764.....	8	5	3	3.1	3.8	3.1
Cirrhosis of liver, 581.....	16	14	2	6.1	3.1	3.9
Diseases of pregnancy and childbirth, 640-689.....	12	3	9	17.4	8.5	25.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684.....	1		1	1.4	2.8	9.0
Congenital malforma- tions, 750-759.....	24	19	5	3.6	3.2	3.4
Accidental deaths, total, 800-962.....	185	128	57	70.7	57.3	52.3
Motor vehicle acci- dents, 810-835, 960.....	67	48	19	25.6	23.5	22.9
All other defined causes.....	400	213	187	152.8	165.1	160.1
Ill-defined and un- known causes, 780, 793, 795.....	174	60	114	66.5	57.7	58.5

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the March reports of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Puerperal Care—Concern over the patient's condition quickly dwindles with the birth of the child. This is partly understandable. The puerperium comes along as much of an anti-climax. Concern over what may have been a complicated pregnancy has ended; apprehension regarding labor is over; fatigue and the need for rest for both patient and physician now takes hold. Yet, it is during this early phase of the puerperium that some of the more serious accidents occur. It is here that we see the first real weakness in postpartum care. Without going into detail it should be emphatically stated that every immediate postpartum patient is entitled to "recovery room" type of care. Intravenous ergotrate, a shot of penicillin and casual observation are not substitutes for close scrutiny by trained personnel. No immediate postpartum patient should be returned to her own room until her pulse is below 100, her blood pressure normal, blood loss adequately replaced and all bleeding controlled. Doubtless, regulations to this effect are to be found in many hospitals but their execution is another matter. Recovery room care means something more than placing the patient within four walls and a ceiling. It means trained personnel—which may well be the accoucheur himself. Indeed, good recovery room type of care can be given in any room such as the delivery room or labor room, or whatever is available. The important feature, however, is the care, not the room. This should equal in every respect the care given postoperative patients. Much more can and doubtless will be said regarding this subject but for brevity sake I shall not belabor the matter further at this time.

Good postpartum care must give some thought to rehabilitation of the patient. It is not enough merely to check on involution of the uterus and the condition of the cervix. Functional restoration is even more important. There are several angles to this but I shall mention only two. While obvious defects in healing, tender scars, hemorrhoids and other complications are often tended to, functional restoration is neglected. There may be a good deal of talk about the musculature of the generative tract during pregnancy and labor. In prenatal classes pregnant women are frequently told about this or given movie demonstrations showing how these muscles work. Yet, we ignore or forget to tell the puerperal patient about muscle function during her period of rehabilitation. Mere healing of the vaginal mucosa does not imply an intact underlying muscle. Yet, the functional restoration of the commonly overstretched vagina and pelvic floor may play an important part in the future health of the patient. No one can say that cystocele, rectocele and uterine prolapse will be prevented by proper puerperal care. But, exercise of these muscles, whether it be in the form of tensing, use of the perineometer or the frequently talked about but seldom used postpartum exercises will definitely lessen the likelihood of the various kinds of organ decensus.—Miller, J. Iowa M. Soc., July '51.

AMERICAN MEDICAL ASSOCIATION NEWS

**INDUSTRIAL MEDICINE ELIMINATES MANY
AILMENTS OF EMPLOYEES**

Simple stretching exercises are eliminating backache and headache complaints among workers. The industrial doctor's understanding of a patient's problems are preventing emotional tensions and breakdowns. Careful work placement of those with heart conditions is making use of their skills without endangering the patient's welfare.

These are the results of an attack on the problems of absenteeism, slowdowns and accidents which is being carried out by industrial medicine, according to articles in a recent issue of the Journal of the American Medical Association. Both preventive medicine and therapeutic medicine are being used to secure the nation's production requirements.

In the industrial field the biggest "headache" is the backache with its accompanying muscular pain, reported Dr. Harvey E. Billig, Jr., orthopedic surgeon, of Los Angeles. The terms "railroad spine," "gold-bricker," "neurotic," "compensationitis," "malingerer" and many others have arisen to becloud the issue, Dr. Billig added.

Chronic posture habits are a frequent cause, he reported. A telephone company experienced a huge prevalence of backaches, headaches and other complaints among its thousands of women operators seated with a forward thrust of head and neck at switchboards. Examination revealed a contracture of ligaments in several parts of the body. The complaints were eliminated by simple stretching exercises three times daily.

An airplane plant had a large absenteeism among its women workers in spite of a handsome monthly bonus for each group provided there was no off-duty among the group. During the first 10 months after instituting the stretching program on a voluntary basis off-duty time was reduced to zero among thousands of women, Dr. Billig said.

A major oil-tool manufacturer, plagued

with a prevalence of backaches and sciatica, instituted a stretching program. Lost time based on such complaints was eliminated.

In severe cases, assistance is given the patient if he is unable to do the stretching hard enough to accomplish a progressive loosening of muscles.

Psychiatry also is playing a large role in industrial medicine, according to Dr. Floyd O. Due, psychiatrist, of Oakland, Cal. Employees are inclined to bring to work the tensions of family relationship and social environment, with resultant lost hours in terms of manpower, Dr. Due said.

"It has long been accepted that absenteeism, work slowdowns and accident-proneness are influenced by such emotional tensions," he said. "The plant physician occupies a unique position between management and the worker. The position of the doctor in our culture allows for special confidence from the worker, even though the worker may consider that the doctor represents management.

"The doctor's attitude can, therefore, be very influential with the worker. If the doctor is to function to the best interest of the plant his attitudes should also be influential with the management. Thus, he can arbitrate many potential grievances that might lead to emotional tensions and breakdowns."

The emotional stresses, he pointed out, may be reflected in headaches, upper gastrointestinal complaints, diarrhea or colitis.

Industry in World War II was compelled to hire an increased number of older people suffering from high blood pressure, hardening of the arteries, rheumatic heart disease and other heart and blood vessel conditions.

"To a great extent experience with these groups proved that persons who had cardiac (heart) disorders with a limited disability could carry on very well in industry," Dr. Bergein M. Overholt, an internist, of Knoxville, Tenn., reported.

Dr. Overholt said that with the increase in the span of life the need for continued employment of older workers is obvious.

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INTRAVENOUS DEMEROL AND SCOPOLAMINE IN THE MANAGEMENT OF LABOR

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The combination of demerol and scopolamine for obstetrical analgesia and amnesia has been utilized with increasing frequency since demerol was first synthesized a decade ago. Of the many reports on the use of these drugs in obstetrics a surprisingly few specify that the intravenous route was used. Therefore, the present report on the use of this drug combination in labor differs from most others in that the intravenous method is used exclusively; and, in almost all cases, it is used only at the beginning of the second stage of labor. A short acting barbiturate is employed during the first stage of labor to allay anxiety and fear, and to enhance the activity of the demerol and scopolamine to be given at the end of the first stage.

Many years ago we were impressed by the fact that morphine and scopolamine could be given in relatively large doses without deleterious effects to the fetus provided the delivery was completed promptly after the drugs were administered. Similarly, rapid consummation of the delivery after demerol and scopolamine have been introduced by vein is considered to be a safeguard against depression of the fetus.

The ever-growing list of drugs and the multiplicity of procedures employed in the conduct of labor today bear witness to the fact that all methods have certain drawbacks, and none is entirely satisfactory. This is quite understandable when one considers that the present-day gravida believes

that it is her inherent privilege to be entirely free of any mental anguish or pain during or after labor. The attending physician then endeavors to attain this end, but with complete safety to the mother and infant, and without interference with the normal processes of labor. He must be skilled in the technique of the chosen procedure as the success of the method will bear a direct relation to the degree of mastery of the technique. In addition, the agents used should ideally be inexpensive, readily obtainable, and easily administered. Whether or not an agent will be forthcoming which will satisfy all the above criteria for perfect analgesia or anesthesia in labor is problematic.

This report is based on 205 deliveries during the past three years in which intravenous demerol and scopolamine were used. The number of cases is small; however, the group offered a variety of maternal conditions which presented abundant opportunity to evaluate the procedure.

This series is comprised of 162 multiparas and 43 primiparas. There were 4 cases of bronchial asthma, 4 cases of arrested pulmonary tuberculosis, and many cases of simple respiratory infection. One case of active pulmonary tuberculosis complicated by marked hypotension is included. One patient had mitral regurgitation of a marked degree. Two patients refused inhalation anesthesia.

METHOD

As soon as the patient is considered to be in active labor, with 2 to 4 cm. cervical dilatation, she is given a short-acting barbiturate to produce relaxation and to relieve psychic distress. The barbiturate is repeated as needed until the cervix is near complete dilatation. The subsequent effects of demerol and scopolamine would be less successful if a barbiturate was not given.

The outpouring of epinephrine in an excited person is definitely known to reduce the effectiveness of an analgesic or anesthetic agent¹; therefore, the barbiturate also serves to enhance the effect of the demerol.

When cervical dilatation is almost complete, and the patient has been placed on the delivery table, prepared for delivery, and the membranes ruptured, 50-100 mg. of demerol and gr. 1/150 to gr. 1/100 of scopolamine are given intravenously. The injection is made slowly, extending over at least a two minute period. Rapid administration has been found to frequently produce nausea, vomiting, and a sensation of dizziness.

This single injection produced sufficient analgesia for delivery and for all necessary repairs to the perineum, cervix, and vagina with the exception of three cases.

In this series all deliveries were completed within 25 minutes after administration of the demerol and scopolamine, and many were completed within 10 minutes.

RESULTS

Attempts to analyze the analgesic and amnesic results by quantitative measurement are hazardous in that the patients' answers are greatly influenced by their individual personalities, previous experiences and other factors. Therefore, the results will be dealt with only in a general manner.

Of the 43 primiparas, 10 delivered spontaneously and 33 were delivered by episiotomy and outlet forceps. Thirty-eight of the 162 multiparas required forceps delivery, including 14 cases of fixed occipito-posterior position. Two versions and extractions were performed in cases of prolapsed cords, and 3 versions and extractions were performed for occipito-posterior positions.

There was no severe asphyxia of the newborn; the usual 5 to 6 per cent of mild asphyxia was encountered. There was one fetal death, but this was not considered to be due to drugs but to congenital defects.

Vomiting occurred in two women during the second stage of labor. Extreme restlessness developed in two women; a small amount of chloroform was administered to control this.

Three patients continued to complain of perineal pain during the second stage, and this was relieved by pudendal blocks.

None of the patients, when questioned in the early postpartum period, expressed dissatisfaction with the procedure used. More than half volunteered the information that they were pleased with the method. None remembered what happened after receiving the intravenous injection.

There were no maternal deaths nor untoward reactions continuing into the postpartum period. Blood loss was not excessive, and blood transfusion was not required for any patient.

ADVANTAGES

1. In this method the agents may be given on a moment's notice, and the full analgesic effect is produced almost immediately.

2. The patients may be individualized, offering an elastic type of management of labor. The method may be easily modified in accordance with the particular patient's reaction to the stresses of labor.

3. This procedure has a distinct advantage over inhalation anesthesia in cases of bronchial asthma, pulmonary tuberculosis, other respiratory infections, and in those with an aversion to the inhalation mask.

4. Intravenous demerol and scopolamine are much simpler and more convenient to employ than caudal and spinal methods, particularly when time is an important factor.

5. This method does not cause a precipitous drop in blood pressure. Batterman and Himmelsbach² have stated that demerol should never be given intravenously because of the sharp drop in blood pressure

1. Snyder, Franklin F.: *Obstetric Analgesia and Anesthesia*, Philadelphia, W. B. Saunders Co., 1949, pp. 223-224.

2. Batterman, R. C., and Himmelsbach, C. K.: *Demerol—New Synthetic Analgesic*, J. A. M. A. 122: 222, 1943.

produced. In this series fluctuations in blood pressures were insignificant, however.

6. Generally speaking, this procedure is pleasanter for the patient than other types of analgesia or anesthesia.

7. Vomiting is rare, being present in only two patients of this series.

8. There was no detectable tendency to increased bleeding in the postpartum period.

9. No cases of postpartum hang-over were found with this method.

10. Demerol and scopolamine by venoclysis produce adequate analgesia for performing episiotomies and perineal repairs.

Schadel³ has found that demerol and scopolamine alone are not usually adequate for perineal repair. A supplementary pudendal block was necessary in only three of our 205 cases.

11. These agents are considered to be safe for the mother and infant when administered according to the described schedule. No serious depressant effects were noted in the infants.

12. The patients frequently sleep between pains, but can be easily aroused and will respond to the urge to bear down and deliver spontaneously.

DISADVANTAGES

1. This method is not entirely satisfactory in rapidly progressing deliveries because the preliminary barbiturate administration is an essential adjunct.

2. It is contraindicated in severe toxemias of pregnancy. According to Maximov⁴ this condition is the only actual contraindication known to the use of demerol and scopolamine.

3. Intravenous demerol and scopolamine are not suitable for use in premature births because of the possibility of fetal asphyxia.

4. This method is not recommended in cases in which there is evidence that delivery will be prolonged.

5. A minor degree of dizziness, nausea, and dryness of the mouth and throat are sometimes encountered, but these sensations are usually transitory.

6. Scopolamine may occasionally cause extreme restlessness.

CONCLUSIONS

A method for the use of demerol and scopolamine intravenously in the management of labor has been described.

A series of 205 obstetrical cases is presented in which this technique was employed. None of the mothers expressed dissatisfaction with the procedure and more than half voluntarily commented that they were pleased with the conduct of labor.

In this group of cases, the method proved to be a very helpful adjunct in the conduct of labor in reducing psychic distress, conserving the mother's physical strength, and lessening to some extent the incidence of instrumental delivery. It did not interfere with the normal forces of labor, and it appeared to be harmless to both mother and baby in the dosages and method of administration herein described. The judicious use of these drugs in indicated cases, with the usual diagnostic acumen necessary in obstetrics, seems to be a justifiable procedure.

Cancer of the Rectum—The symptomatology of cancer of the rectum revolves around: (1) blood in the stool or on the stool; (2) change in bowel habit. Strangely enough, the early symptoms which are so essential to observe are either masked or ignored or misinterpreted. It is not possible to determine the exact time at which cancer of the rectum begins, but it is highly possible that most of them have existed many months or even a year or more prior to their recognition. Most surgeons believe that between nine and twelve months elapse prior to diagnosis, and that has been my experience in a large series of cases.

Bleeding in cancer of the rectum means bright red blood and bright red blood more often than not is due to some other lesion, such as hemorrhoids, fissure, and fistula, rather than to cancer. The blood may be mixed with the stool or simply streak the stool and it should be remembered that it does not appear until the mucous membrane has been eroded and that may be months from the initiation of the cancer. On occasion, a sudden hemorrhage may call attention to the presence of the growth. Small amounts of blood on the paper are among the earliest symptoms in most cases.—*Rankin, New Orleans M. & S. J. Aug. '51.*

3. Schadel, Lees M., Jr.: A Method of Obstetric Analgesia and Anesthesia, *Am. J. Obst. & Gynec.* 55: 1016-1022 (June) 1948.

4. Maximov, Alexis: Demerol Analgesia in Obstetrics, *California Med.* 65: 43-47 (August) 1946.

CARCINOMA OF THE SKIN

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Carcinoma of the skin is the most common form of cancer which we encounter. The number one sees in any clinic or office will depend on how many persons work out of doors. If there are a large number of farmers or sailors, there will be a large number of skin cancers seen. Skin cancer has been known and recognized for some time. It has been described in the earliest medical literature. Cancer of the skin may appear in the young or in the old. It rarely occurs in farmers under 40 years of age. In sailors the intensity of the sun's rays is reinforced by the reflection from the water. It is for this reason that cancer of the skin is seen earlier in sailors than in other persons. Cancer of the skin is frequently encountered in persons with a ruddy complexion, such as the so-called "thin skinned" individual. These people are prone to develop carcinoma of the skin after exposure to the sun's rays. It is extremely rare in Negroes. It is also rare in the Arabs and in the Indians in South America.

There are two main types of epidermoid carcinoma of the skin¹: 1. the adult hornifying squamous cell carcinoma (sometimes known as acanthoma) and 2. the basal cell carcinoma. Each has several sub-varieties. The squamous cell carcinoma (Fig. 1) is distinguished by the presence of adult squamous cells, hornification and pearl formation. There are two main types, the first of which is the papillomatous, which appears as an elevated, warty outgrowth, movable on the structures below. It remains localized for some time and spreads laterally. In this phase it offers a good prognosis, which is lost when it becomes fixed and ulcerated. The other type of squamous cell carcinoma is flat, depressed, indurated, and infiltrating from an early period. The cells arrange themselves in a tubular manner, and much of the squamous character of the growth is lost. Both the squamous cell and the basal cell may occur in the same lesion. In the more advanced stages of both types there is erosion and ulceration, and the lesion grad-

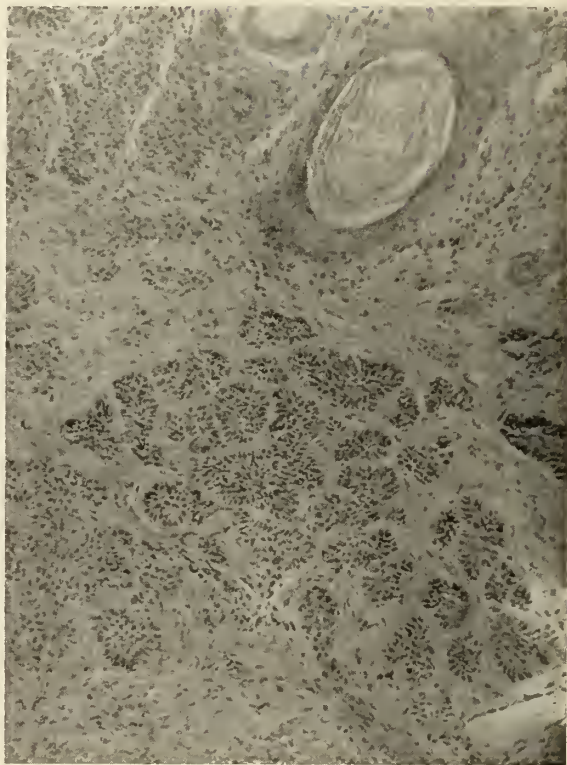


Fig. 1—Squamous cell carcinoma.

ually extends in the form of a broad ulcer with a raised nodular edge and a granulating base. A squamous cell cancer of the skin presents the most typical form of adult epithelioma, and tends to maintain this structure rather rigidly. When it metastasizes the metastasis retains the epithelial, squamous cell nature.

There are also two distinct types of basal cell epithelioma. They develop from the basal cell of the malpighian layer of the skin. They are the reticulated endothelioma and the adenoid epithelioma.

The reticulated epithelioma, or rodent ulcer, (Fig. 2) appears as a flat or smooth, wart-like lesion which long remains without marked change, or what is mistaken for a pimple maintains a persistent ulceration which resists efforts at cure. Early lesions appear as broad, flat elevations or as multiple broad lesions which ulcerate. They show a remarkable tendency to remain superficial. In advanced stages, the rodent ulcer

1. Ewing, James: *Neoplastic Diseases*. W. B. Saunders Co., Philadelphia, 1940, pp. 886-908.



Fig. 2—Basal cell carcinoma.

may involve an entire side of the face. The eye or the ear or the nose is often destroyed completely by it. An erosion of a blood vessel may lead to a fatal hemorrhage.

The adenoid epithelioma: Many epithelial tumors of the skin show a tendency to reproduce the glands found in the skin and are therefore known as adenoid tumors. There are two varieties, depending upon how much fluid is present: 1. The adenoid cystic epithelioma. In this the epithelium is arranged in cords, masses, and groups of concentric hornifying epithelium. The adenoid structures appear as finger-like projections from the basal epithelium or from ducts of glands, and they commonly contain minute or large cystic areas of hyalin, colloid, or mucoid material. These tumors are rarely larger than a bean or a pea. 2. The simple adenoid epithelioma. These tumors are not cystic. They are usually sharply circumscribed and relatively large. Their course is progressive. They occasionally involve lymph nodes.

Macroscopically one may not be able to determine whether a given cancer is of the basal cell type or of the squamous cell type. This is really not important. The main im-

portance lies in one's ability to recognize and diagnose cancer of the skin.

Cancer of the skin may arise directly without a preexisting lesion. However, in most instances, there is a preexisting lesion which is sometimes referred to as a precancerous lesion or a precancerous dermatosis. Many will only be named as they are rare. Only the more common type will be discussed. Of the former type which may be mentioned are acrodermatitis, erythroplasia, chemical keratoses, lupus erythematosus, lupus vulgaris, nevi, radiation dermatitis, syphilis, ulcers (of long standing), Von Recklinghausen's disease, and xeroderma pigmentosum. As previously stated these are the more uncommon lesions which are considered precancerous. The more common lesions which may develop into or lead to skin cancer are scar tissue (cicatrix or keloid), cornu cutaneum, farmer's skin or sailor's skin, keratoses, either senile or seborrheic, kraurosis vulvae, leukoplakia and sebaceous cysts.

Cancer of the skin may develop in scars which result from various causes. Burns are by far the most frequent cause of scar formation. Scars from hot water, hot grease or hot oil, are prone to develop cancer in later years. It usually requires 30 to 40 years for the cancer to develop. However, it may develop in 10 or 15 years. It is usually found in scars which became infected at the time the injury was sustained. It is wise to prevent chronic scar or keloid formation. This may be done by judicious skin grafting if a large scar is suspected. If ulceration does occur, it should be investigated microscopically. If the ulceration refuses to heal, even without proof of malignancy, a plastic operation (skin graft) should be done to remove the danger.

The cutaneous horn (Fig. 3) is usually seen late in life. It arises from cysts, warts, and also from keratoses. About 12 per cent, according to Pack and Livingston,² become cancer.

The changes which are seen in the so-called farmer's skin (or sailor's skin) occur on the uncovered parts of adults who have

2. Pack, George T., and Livingston, Edward M.: *Treatment of Cancer and Allied Diseases*. New York, N. Y., Paul B. Hoeber, Inc., 1940, vol. 111, pp. 1999-2026.



Fig. 3A—Cornu cutaneum before treatment.



Fig. 3B—Cornu cutaneum after treatment.

been exposed to the sun, wind, and rain for many years. They probably also have an intolerance to actinic rays. The skin becomes dry and wrinkles, and the superficial blood vessels become dilated. Permanent freckles appear at the site exposed.

Keratosis, both the senile and seborrheic, are the most frequent precancerous lesions. Only the senile keratosis and the seborrheic

keratosis will be discussed. The chemical keratosis, those caused by arsenic and other drugs, will not be dealt with.

The senile keratosis is more frequently seen on the face, on the margins of the ears, and on the backs of the hands. Occasionally they are encountered on the forearms. They consist of a thickened horny layer or scale which is firmly adherent. The scale may exfoliate only to recur. They are usually of a dirty gray color, though they may be brown or dull red. They give rise to both types of cancer.

Seborrheic keratosis is more often seen on the back and on the chest but they are sometimes seen on the abdomen and also on the face. They are nearly always found in elderly persons. They may grow to be several centimeters in diameter. Their color may be yellowish brown or a dirty brownish black.

Kraurosis vulvae is seen in elderly females. It is occasionally seen in young women in whom the menopause has been induced surgically prematurely. The patient complains of itching of the parts. On examination, it is found that the tissues have become thinned, semi-translucent, and quite tense. The elasticity of the tissues is greatly diminished. Later it may become difficult to distinguish the parts because of the atrophy present, and the sclerosis and retraction.

Leukoplakia may occur on the tongue or on any part of the mouth. It may occur on the lips. It is also seen on the vulva and penis. The patches of leukoplakia are milky white in color and are usually irregular in outline. There may be perceptible thickening. Cracks and fissures are prone to form in the leukoplakia. Lesions of this type are dangerous as they may develop into cancer.

Sebaceous cysts are not the benign lesions they were formerly considered. They may develop into solid tumors. They are frequently seen on the scalp. They form squamous cell cancers. Pack and Livingston² found that about 6 per cent undergo malignant change.

Probably the most typical description of the patient is given by Ackerman and del Regato.³ This is an elderly man with a his-

3. Ackerman, Lauren V., and del Regato, Juan A.: *Cancer—Diagnosis, Treatment and Prognosis*. The C. V. Mosby Co., St. Louis, 1947, pp. 126-168.

tory of visible signs of chronic exposure to the sun's rays. The patient usually has multiple keratoses on the face and on the dorsum of the hands. Cancers of the skin predominantly arise from the strip or band which extends between the upper and lower limits of the nose and ears. Cancers of the skin may arise from preexisting keratoses or they may arise on apparently normal skin which has not been visibly affected. In men the cancers are most frequently on the cheeks and the margins of the ears and on the backs of the hands. Occasionally it is seen behind the ears. In women, cancers are more frequently seen on the forehead than on men as the latter wear a hat or cap and the forehead is protected. On the other hand, in women the preauricular and postauricular areas are rather infrequently involved due to the protection afforded by the hair. Cancers of the skin may be single or they may be multiple. Lesions which grow outward, above the surface of the skin, are less malignant than the lesions which ulcerate or which grow downward. A nodule may persist as such for any length of time. After a while it reaches a certain size and the center becomes depressed, probably due to a lack of blood supply, and there is a depression of the center with the formation of the umbilicated nodule so frequently encountered. The nodules vary in size and may attain the size of 2 or 3 centimeters before they ulcerate. Any wart-like growth or nodule that appears on the skin of a person of middle age and does not respond to the usual type of treatment should be held in suspicion.

Cancers of the skin are very prone to extend for some distance beneath the skin beyond the visible lesion. It is for that reason that so many recur following treatment, either x-ray or radium. The physician should be careful to include a large enough area and to embrace some normal skin in the area treated.⁴

As previously stated, many carcinomas of the skin begin or early become ulcerated. At first the ulcer is shallow and is covered with a crust. Lifting this crust reveals the papillomatous base with the rolled, elevated, pearl-like margins. In a majority of

cases the diagnosis is made clinically, but a biopsy should be taken to confirm this diagnosis.⁵ For the most part the lesions are easily accessible, a large percentage being on the exposed parts of the body, so there should be little difficulty in the clinical diagnosis. One should not hesitate to take a biopsy of suspicious skin lesions and thus obtain a positive diagnosis. The lesion may be benign-appearing yet prove to be carcinoma when examined under the microscope.

The patient on whom a cancer of the skin has been diagnosed in its early stages is indeed fortunate. The smaller the lesion the better the prognosis. The ideal time for treatment of skin cancer is when the nodule is small and freely movable. There are only two types of treatment that are recognized: surgery and irradiation. They both aim at the complete eradication of the growth. To determine the type of treatment the physician must ascertain the type of lesion, whether or not it occurs in a scar, over cartilage, or bone, and whether it has been treated previously. The size of the lesion and how much involvement there has been also affect the type of treatment chosen. In choosing the type of treatment one must determine whether or not the patient is able to stay in the hospital for a long period, and whether this is necessary. The location of the lesion will have considerable bearing on the type of treatment which is given. If there is very little subcutaneous tissue such as is seen in epitheliomas involving the eyelids (Fig. 4), the nose, the ears, and the back of the hand (Fig. 5), they should be given irradiation if they are amenable to that type of treatment. There is no hesitancy in treating lesions of the eyelid,^{6, 7, 8} as a lead shield is inserted between the eyelid and the eyeball (in the conjunctival sac). This effectively protects

5. Michelson, Henry E.: Cutaneous Cancer, J. A. M. A. 136: 683-686 (March 6) 1948.

6. Hunt, Howard B.: Cancer of Eyelid Treated by Radiation, Am. J. Roentgenol. 57: 160-180 (Feb.) 1947.

7. del Regato, J. A.: Roentgen Therapy of Carcinoma of Skin of Eyelids, Radiology 52: 564-573 (April) 1949.

8. Stetson, Chas. G., and Schulz, Milford D.: Carcinoma of the Eyelid, New England J. Med. 241: 725-732 (November 10) 1949.

4. Widmann, Bernard P.: Radiation Therapy in Cancer of the Skin, Amer. J. Roentgenol. 45: 382-394 (March) 1941.



Fig. 4A—Skin carcinoma involving cheek and eyelid before treatment.

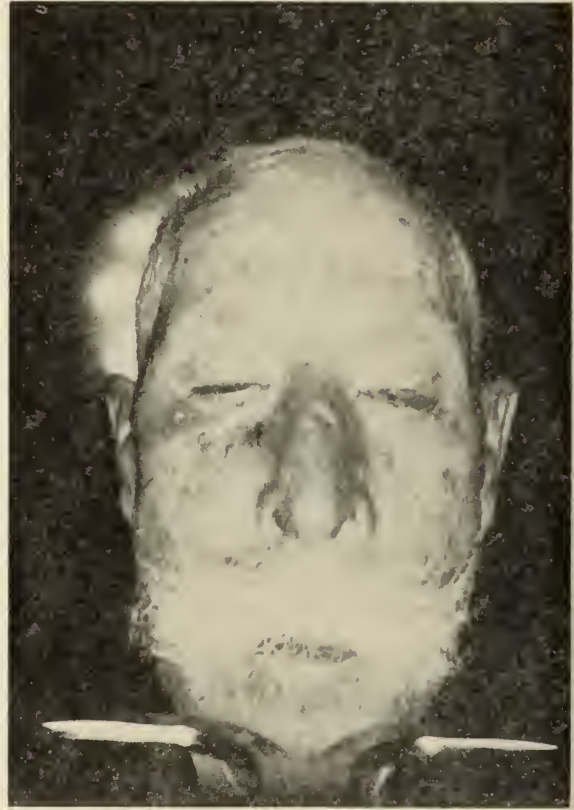


Fig 4C—Skin cancer after treatment.



Fig. 4B—Profile of figure 4A before treatment.



Fig. 4D—Skin cancer after treatment.



Fig. 5A—Skin cancer dorsum of hand before treatment.



Fig. 5B—Skin cancer dorsum of hand after treatment.

the eyeball when low voltage 100 kv (x-ray) is used. Lesions of the conjunctiva, particularly on the eyeball, are better treated surgically as cataracts are prone to form following the use of irradiation. Good results can be expected on the nose and ear following irradiation therapy of the low-voltage type. The cartilage is not disturbed by the treatment if it is not otherwise involved. However, if the growth involves the cartilage or if there is infection of the cartilage, a chondritis or perichondritis will occur. Wet dressings are used in an endeavor to control the chondritis or perichondritis at first. If these are unsuccessful, the patient is referred for surgery.

Carcinomas occurring postauricular, on the backs of the hands, and on the shins and in other places where the subcutaneous tissue is thin are treated only once by irradiation. If they do not respond entirely, that is, if they do not disappear entirely with treatment, they are referred for surgery. Carcinomas occurring in old burn scars, the blood supply of which is poor, are best re-

moved surgically so that a plastic operation can be performed following their removal.

Carcinomas of the skin are prone to follow lymph channels and lymph spaces beneath the skin. It is for this reason that lesions should be removed under the guidance of the microscope when treated surgically. If they are treated with irradiation a wide area should be included. We have seen such lesions which involve only a small area, less than 1 cm. superficially but which extend 2 or 3 cm. beneath the skin. Lesions which have been previously treated with x-ray or radium should be treated surgically. On the other hand, lesions which have been previously treated with surgery may be treated with x-ray or radium or may be treated surgically. Because of the presence of scar tissue protecting the growth, a somewhat larger amount of radiation is required for these lesions than for lesions in which scar tissue does not exist.

Late lesions which have ulcerated and have become very large often require deep

x-ray therapy or radium therapy or surgery or a combination. These require the greatest of skill in treatment. If surgery is undertaken it is frequently necessary that plastic surgery follow the elimination of the cancer.

Cancers of the skin are not more susceptible to treatment but because of their location they are more accessible. They may be given the full amount of treatment with the expectation that the normal structures ex-

posed or removed will recover. For these reasons we may expect a good result in the treatment of carcinoma of the skin.

In a later communication we expect to give the results of treatment in cases of carcinoma of the skin. The results of treatment have not been observed long enough for report nor has the result been noted in a sufficient number of cases.

1023 S. 20th Street.

A CONSIDERATION OF HEMATURIA

J. W. DAVIS, JR., M. D.
Montgomery, Alabama

Since nearly every physician occasionally has a patient with blood in the urine, it would seem worth while to discuss the implications of this symptom. Also, it might be of value to indicate a plan whereby a diagnosis can be made.

The patient with hematuria usually presents himself promptly and therefore it is the physician's responsibility to seize this opportunity to make a diagnosis. This is true in gross hematuria. When the content of blood is only microscopic, the patient is not aware of this and the doctor must be even more vigilant to offer the protection of an early diagnosis.

How much blood in the urine is necessary to require an investigation? The answer to that would seem to be that normal urine contains no blood and sufficient study should be done to draw a satisfactory conclusion. In May 1946 a patient presented himself with the following story. He was insured by a company who had his urine examined periodically and a few red cells had been found on two recent occasions. Examination of this man showed only one to three red cells in his urine per high power field. The pyelogram revealed a tumor of the kidney which, at operation, proved to be a solitary cyst.

At this time when everyone, including patients as well as doctors, are so cancer conscious, we may use the original hematuria as a lever to bring about early diag-

nosis of urinary tract tumors. In this way we may get a larger percentage of cures. Also, it may be possible to prevent severe kidney damage from other lesions.

We have to be aware that inflammatory or obstructive lesions may at times obscure a malignancy. A man, seventy one years, complained of frequent and painful urination and at times the passage of some blood. He had had surgery for removal of prostatic stones and later for stricture of the urethra. The last operation was done over one year before the present illness. The urine was grossly infected and a stricture of the perineal urethra was ascertained. After treatment of these conditions the symptoms and the hematuria continued, and further investigation showed that he had an extensive inoperable tumor of the bladder.

That the doctor may be remiss in temporizing with hematuria is illustrated by a man, aged sixty one years, who had blood in his urine occasionally for one year and was treated empirically. At the end of this time study revealed a large papillary tumor of the bladder involving the left ureteral orifice, bladder neck, and prostate. To attempt a cure, uretero-intestinal anastomosis and cystectomy were done.

CAUSES OF HEMATURIA*

I. General Causes (extra-urinary)

(A) Blood Dyscrasias:

Hemophilia, erythema, scurvy, morbus maculosus, purpura, jaundice, leukemia, Hodgkin's disease, etc.

*Hinman: Principles and Practice of Urology, W. B. Saunders Co., Philadelphia and London, 1936.

(B) Infections:

1. Infectious fevers:
Typhoid, malaria, smallpox, scarlet fever.
2. Local infections adjacent to the tract:
Appendicitis, pelvic abscess, perinephritis.

(C) Medicinal or toxic:

Cantharides, turpentine, urotropin.

(D) Nervous:

Tabes dorsalis, vicarious menstruation, hysteria.

II. Local Causes (urogenital)

(A) Lower Tract:

1. Urethra (initial hematuria is the rule, i.e., blood at the beginning of urination).
Particularly posterior urethral infections.
Stricture.
Foreign bodies or trauma.
Prostatic conditions.
Tumors.
2. Trigone and neck of the bladder.
(Terminal hematuria is the rule, i.e., blood at the end of urination).

(B) Midtract:

1. Bladder
 - a. Stone.
 - b. Tumors of the bladder cause at least 50 per cent of all massive hematurias (Herman).
 - c. Ulcer and infections.
 - d. Diverticulum.

(C) Upper Tract:

1. Ureter:
 - a. Stone.
 - b. Stricture.
 - c. Tumor.
2. Kidney:
The five most frequent causes are:
 1. Stone.
 2. Renal tumors.
 3. Tuberculosis.
 4. Infection.
 5. Glomerulonephritis.

But any disease of the kidney may cause hematuria.

In recent years a good deal of work has been done on lower nephron nephrosis or hemoglobin uric nephrosis which has been found as a result of various insults to the body, such as battle wounds, crushing injuries, burns, blood transfusion reactions, sulfonamide intoxications and mercurial poisons. The lower portion of the tubule of the nephron suffers the greatest damage. Clinically, it is characterized by the appearance of bloody urine, oliguria and azotemia,

and not infrequently results in the death of the patient.

As a basis for a working diagnosis, hematuria may be grouped according to presence of associated symptoms. If pain in the flank is present, then pyelitis and an obstructing lesion in the upper tract need to be considered. Frequent and painful urination indicates irritation of the bladder or posterior urethra and suggests the possibility of cystitis, posterior urethritis, or stone in the bladder. When difficult urination, retention, or incontinence of urine occurs, then an obstructive lesion at the bladder neck is likely. Those cases without any other symptoms often prove to be a tumor arising from the mucous membrane lining some portion of the urinary tract. These observations serve only as guides in approaching the problem.

In arriving at a diagnosis a careful history is important. Get the patient to describe the bleeding, the time of onset and the character, whether initial, terminal or mixed. The duration and whether constant or intermittent are of interest.

There may or may not be associated symptoms. If the patient does not offer the information it may be necessary to inquire as to recent medications. An occasional source of confusion is the red urine that is seen after the ingestion of phenolsulphonephthalein. This is a constituent of a dozen or so preparations sold over the counter in drug stores and produces quite a red color in the alkaline specimen.

In the family history, inquiry should be made as to the presence of tuberculosis, polycystic disease of the kidneys, and cystinuria. In the past history, previous episodes of bleeding may at times indicate the duration of the condition. Recent infections of the upper respiratory tract or skin may be significant in nephritis and kidney infections. A history of tuberculosis is always suggestive. Radio-therapy, particularly that for carcinoma of the cervix uteri, causes changes in the bladder often of a hemorrhagic nature. Hemorrhage from other parts of unusual nature may indicate a tendency to pathologic bleeding.

Physical examination, though seldom giving the diagnosis, is a great help in determining the general status of the patient and

often will produce some clue. The general appearance, whether pale, flushed and feverish, and evidence of acute or chronic illness or even shock are to be noted.

Hypertension might fit in with the presence of nephritis. Enlarged lymph nodes may be significant. Masses in the upper abdomen or flanks draw attention to the possibility of renal neoplasm, while enlargement in the suprapubic area focus attention on the bladder. Enlarged indurated epididymides suggest the presence of old infection in the lower tract. Blood or discharge from the urethra also indicates trouble in the lower urogenital tract. Occasionally, strictures can be detected by accumulations of fibrous tissue along the urethra.

Much can be learned from careful digital rectal examination. The enlarged prostate is easily detected, and it should be noted whether it is smooth and regular or whether there is irregularity, nodules, unusual hardness or fixation. For the most part, carcinoma of the prostate is easily discovered by rectal examination and I think the physician should not lose the opportunity to do periodic rectal examinations of the prostate in his male patients, particularly those beyond the age of forty. The educated finger can also determine indurations and masses in the seminal vesicles and appreciate the distended bladder.

When a bladder tumor becomes palpable it indicates either a large mass or invasion in the bladder wall. Therefore, it is proper to emphasize that it is a late sign and not to be depended on in early diagnosis.

Edema of the lower extremities is not uncommon in nephritis as well as the patient with chronic retention of urine.

Changes in reflexes may be noted in those people who have disturbances of bladder action due to neurogenic causes.

Pelvic examination in women obviously needs to be done, noting any secretions from the vagina or urethra or Skene's ducts. The bladder area is generally quite accessible to palpation on bimanual examination in women.

The urine may now be collected. In men it is well to obtain specimens in your presence and preferably in two glasses. Much can be gained by this, such as the presence

or absence of blood and, if present, whether it is initial, terminal or mixed and also whether accompanied by pain or straining. The size and force of the stream are of interest. In women it is quite necessary to obtain a catheterized specimen. This is best done after inspection of the vulva and urethra. On microscopic examination red cells can be definitely identified. It will also be noted whether pus cells are present and likewise crystals. Trichomonas infections are often seen in women and not rarely in men. Cell examinations on sediments, according to the Papanicolaou technique, have not been generally adopted because of difficulties encountered in obtaining accurate opinions.

The albumin test is usually positive in some degree if the urine contains more than a few red blood cells. In the absence of gross blood a strongly positive albumin test suggests nephritis. Chemical tests for blood, such as benzidine, are at times useful. Casts add to the evidence of the presence of nephritic changes.

Stained smears on the urine sediment, done with methylene blue, gram- and acid-fast techniques, give good information as to the presence and type of infecting organism. This can be confirmed by cultures and guinea pig inoculations.

If there is evidence of retention of urine, catheterization may be desirable at this time and possibly a retention catheter will be left in place.

The time for examining the patient's blood will vary according to circumstances, the degree of hematuria, and the condition of the patient. In the hospital case this is always done promptly and at times will provide the correct answer. This is true in malaria, leukemia and hemophilia. It might be well to note that since some vascular thrombotic diseases have been treated with anticoagulants there have been a number of cases of hematuria observed as complications. The prothrombin percentage is not always greatly depressed, as noted by Nelson and Washington. Bone marrow studies and lymph gland biopsies may need to be done. The blood Kahn and agglutinations will occasionally be of value.

The flat K. U. B. x-ray can generally be quickly done and gives a good deal of in-

formation, such as enlarged kidney shadow, shadows suggestive of stone, bone changes, as might be seen in tuberculosis, or metastatic carcinoma. Lumbar scoliosis and absence of psoas muscle shadow may be significant. The normal or negative K. U. B. is also helpful.

At this point decision has to be made about immediate cystoscopy. If gross bleeding is present and there is no contraindication, this should be done because information as to the origin might be obtained at this time that could not be obtained at a later period when bleeding has stopped.

Instrumentation in the presence of acute infection may be hazardous and can be done later, following control with suitable antiseptics, with more safety. It is true that present antibiotics and chemicals have lessened the danger of most instrumental complications. On the other hand, if obstruction is present, instrumentation is indicated to establish drainage.

Instrumentation in prostatism is fairly often attended with a great deal of discomfort and increased difficulty in voiding and also infection. When necessary it should be accomplished under the best circumstances, frequently under anesthesia and with benefit of urinary antiseptics and indwelling catheter if needed. Suppression of urine and even anuria may follow cystoscopy in cases of nephritis and should not be undertaken lightly. Obviously hemorrhagic blood dyscrasias might be followed by more active bleeding.

If debilitated patients or those with circulatory difficulty are to be cystoscoped, the cystoscopy should be done only after careful evaluation and preliminary preparation. The medical consultant can be of much help and sometimes great consolation here.

Cysto-urethroscopy can be of great value when done early and in the presence of active hematuria. The origin, if in the bladder or urethra, can generally be identified. However, when present in the urethra, the activity (if not great) sometimes ceases with the introduction of the instrument. Ulcers, tumors or stones in the bladder are readily observed. Also, efflux of bloody urine from one or the other of the ureteral orifices, or both, can be observed with a little patience. The information so obtained is often most

important. It is in this way that early tumors of the bladder can be detected and destroyed before they infiltrate the wall and become incurable.

Ureteral catheterization provides useful information in many cases. Difficulty in passing a catheter may be encountered due to obstructions such as stone, stricture or angulation. It is interesting to note if bloody flow from the catheter corresponds to the bloody efflux noted from observing the ureteral orifice. Specimens from the kidneys are examined for pus and bacteria. Occasionally in a carbuncle of the kidney, bacteria can be demonstrated even when pus cells are absent. Differential function tests give necessary information, especially in deciding what line of treatment to employ. Phenolsulphonaphthalein, indigo-carmin excretion tests, and estimations of nitrogen excretion are those most useful. The presence of gross blood in the specimen alters its interpretation in some degree.

Pyelography is necessary for a complete study and the diagnosis may await this information. If done at the time of bleeding, filling defects due to clot may be present and reexamination at a later time may have to be done to rule out other pathology. This is not a contraindication.

Intravenous pyelograms may be employed and often are quite satisfactory. They give more information in regard to function and dynamics in the upper tract. It must be remembered though that the urine conducting systems are not necessarily well filled with contrast medium. If the origin of the bleeding is suspected in the upper tract, retrograde studies will give more dependable data.

The pyelographic patterns are frequently diagnostic. Changes due to chronic conditions, i.e., atrophy and clubbing of the calyces, may be seen, as well as changes in the mucosa as in pyelitis cystica. Early and small tumors of the kidney may be difficult to detect unless there is encroachment on a calyx. Large renal tumors are generally easily detected. Calculi are easily discerned unless non-opaque, then air pyelograms may prove very helpful. Hydronephroses are quite obvious. Tuberculosis is recognized usually without too much trouble and is confirmed by the bladder picture and bacteriologic study. Polycystic disease presents

a large pelvis and usually bizarre or crescentic deformities. Together with the family history, frequent elevation of blood pressure, and diminished kidney function, this disorder can be identified. Other congenital anomalies are recognized and seem to be more frequently the seat of pathology than the normal kidney. It is frequently impossible to distinguish between solitary cyst and tumor of the kidney by pyelograms. In this connection it should be mentioned that lumbar aortography is able to fill this gap. Since only a few urologists have trained themselves in this technique, operative exploration will continue in general practice for the present.

Although cystograms give a good deal of information, they will usually play a secondary role in diagnosis in cases of hematuria. They show changes due to an enlarged prostate, large or infiltrating tumors, diverticula, stones and changes in the size and position of the bladder. They are diagnostic in cases of rupture of the bladder. Small tumors of epithelial origin are generally not evident. Cysto-urethrograms can give information in cases of stricture, urethral tumor and urethral diverticula which supplement direct inspection.

X-rays of other parts than the urinary tract may be rewarding. The lungs are often involved in tuberculosis and cancer of the kidney. The long bones may show periosteal disease in scurvy. Bowel x-rays may be of help in localizing abdominal tumors.

Despite what we presently consider as an extensive armamentarium and advanced techniques, there are cases which cannot be diagnosed. Because of this they are labeled idiopathic hematuria. Undoubtedly the pathology is there but has escaped detection. These cases deserve careful follow-up over a period of time and it is my opinion that they will either get well or eventually fall into one of the known causes.

CONCLUSIONS

1. A patient with gross hematuria most often presents himself to his physician promptly.

2. It is the responsibility of the physician to see that sufficient study is carried out to make an exact diagnosis in any case of hematuria. This will generally include cystoscopy and pyelograms.

3. Cystoscopy at the time of gross hematuria is most helpful in localizing the site of the lesion.

4. In cases with acute inflammation and without obstruction, instrumentation can be delayed long enough to receive preliminary care.

5. Prompt and adequate investigation will save lives and kidneys.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Presented by

Benjamin P. Clark, M. D.

We were called to the hospital about 11:00 a. m. to see an infant who was not doing well. He had been born at 3:13 a. m. of a normal delivery. This was the second pregnancy; the first child was living and well. In August 1946 the mother had been admitted to the same hospital because of menorrhagia and had been given a transfusion, with her husband (the father of this child) acting as donor. At that time the laboratory had reported her as being Rh positive. She had some reaction to this transfusion.

This new-born infant was slow to cry, and resuscitation and oxygen administration were necessary. Even then the cry was weak and it was noted that the abdomen was larger than normal and firm to palpation. He was removed to the nursery, put in an incubator, and oxygen administered. At about 6 a. m. it was noted for the first time that the infant was jaundiced. His color was also described as "ashen," and caffeine and sodium benzoate were given with no noted improvement.

When first seen by us the infant was in a critical condition. He was intensely jaundiced and pale. The liver was palpable and extended down to the level of the umbilicus. Respirations were shallow. A clinical diagnosis of erythroblastosis was made and preparations made for an exchange transfusion. Within a few minutes the laboratory reported that the infant was Rh positive, the mother Rh negative, and the Coombs test strongly positive. The hemogram on the infant revealed 2 million erythrocytes with

11 Gm. of hemoglobin and 1,604 erythroblasts per 10,000 erythrocytes.

An attempt was made to do an exchange transfusion, using Rh negative blood from a female donor. However, due to technical difficulties only 150 cc. of blood were exchanged. Another 100 cc. of citrated blood from the same donor were given by slow drip. The infant expired at 6:45 a. m., slightly more than 24 hours after his birth. An autopsy was done and the cause of death was found to be erythroblastosis.

The gross anatomical diagnoses were:

Hemolytic icterus.

Erythroblastosis.

Hepatomegaly.

Passive congestion of the spleen.

Erythroblastosis has been discussed previously in these reports. This additional case is presented because of certain unusual features. Due to the technical error in the laboratory in 1946 the mother had a double opportunity to become sensitized to the Rh factor, first with her earlier pregnancy and secondly when she was transfused with Rh positive blood. Then her obstetrician did not repeat the Rh determinations and was not, therefore, prepared for an erythroblastotic infant. This in turn resulted in our seeing the infant so late that we were unable to do a completely satisfactory exchange transfusion.

However, I doubt if this infant could have been saved under any circumstances. He was severely involved and even could his life have been saved I am certain that he would have been severely damaged by kernicterus. He does provide an excuse to discuss again some of the problems of the management of this condition.

We feel, of course, that every expectant mother should have Rh determinations run early in the course of her pregnancy. These should be repeated if there is anything which would lead the obstetrician to believe that the first report might be in error. Too much dependency should not be placed in reports of Rh determinations made during the first few years of our knowledge of the Rh factor. Sera then were unreliable and technicians were not too familiar with the techniques. If the Rh is reliably reported positive, the obstetrician may, for practical purposes, dismiss the possibility of

erythroblastosis from his thinking. It may, of course, be produced by other factors but usually with much less severity than if due to sensitivity to the Rh factor.

If, however, the Rh is reliably reported negative further investigation is imperative. A careful history of previous pregnancies, transfusions and injections of blood should be elicited. An Rh determination of the husband must be done. Antibody titers must be run on the mother at frequent intervals during the last few weeks of pregnancy. A rising antibody titer should make one alert to the probability that the infant will be erythroblastotic and preparations should be made for a complete replacement transfusion immediately after delivery. The rising antibody titer should be the red flag of warning to the obstetrician. We must emphasize that early interruption of pregnancy is not indicated because of a rising antibody titer. Early interruption of pregnancy will merely add the burden of prematurity to that of erythroblastosis and kernicterus is much more frequent in the premature infant. Erythroblastosis as manifested by a rising maternal antibody titer is never, alone, an indication for a section.

Perhaps the most important goal in the treatment of erythroblastosis is the prevention of kernicterus. This goal can only be achieved by an early and complete exchange transfusion; and this, in turn, requires an alertness on the part of the obstetrician that he is going to deliver an erythroblastotic infant, followed by teamwork with the pediatrician to achieve as complete exchange of blood as possible. Transfusions given after the first 24 hours of life may correct the anemia but will probably have little influence in the prevention of kernicterus.

Tuberculosis is second in importance among public health problems in Turkey, malaria having almost come under control. Long years of malaria control work, the application of DDT and administration of quinacrine plus health propaganda have considerably lessened the incidence of malaria, and deaths from malaria are now few. The tuberculosis death rate is 150 to 200 per hundred thousand. The rise in the cost of living, high prices for food and rent and an insufficient number of hospital beds for the tuberculous, resulting in long waiting lists, have greatly increased the spread of the disease among the lower income groups during the war years.—*Editorial, J. A. M. A., May 5, 1951.*

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INFECTIOUS MONONUCLEOSIS

"Infectious mononucleosis is probably a virus disease and at present there is no generally accepted specific treatment. It is a generalized disease with protean manifestations and infiltrations of abnormal lymphocytes in almost every organ of the body. While in the majority of cases the disease is mild, there frequently are prolonged periods of disability and occasionally there is a death. It is therefore important to search for an effective treatment, especially for the seriously ill patients. Numerous attempts have been made to find a specific therapeutic agent, starting with arsenicals and emetine, which were found ineffectual."

The above is the opening paragraph of the excellent article by Kaufman¹ dealing with this troublesome and increasingly encountered entity. Kaufman points out that there is no specific therapy available for infectious mononucleosis and that "The most important aspect of symptomatic treatment is rest. This means that the patient should remain in bed several days after the temperature reaches normal; that he should stay away from work for a few days more; and that no strenuous physical exertion should be indulged in for at least three or four weeks after that." He goes on to tell us: "I have frequently seen relapses when a patient returns to school or work or athletics too soon. Fatigue and lassitude are often marked for several weeks, especially in the late afternoon, so extra rest should be prescribed. 'Tonics' during this period are probably beneficial mainly for the psychic effect. Some patients have low-grade fever and generalized lymphadenopathy for several weeks or months, which no therapy seems to influence. Isaacs extolled the value of adrenal cortex extract orally for 'chronic infectious mononucleosis'; but I have never seen a case that could be considered chronic. I have, however, seen a number of instances of recurrences." The New York investigator says that "Relatively rare manifestations of infectious mononucleosis include pneumonia, nephritis, myocarditis, meningitis, encephalitis, peripheral neuritis, and abdominal pain simulating an acute surgical emergency. The recognition of the etiology of

1. Kaufman, Robert E.: Treatment of Infectious Mononucleosis, Am. Practitioner 2: 305 (April) 1951.



MRS. FRED REYNOLDS
President
Woman's Auxiliary
1951-1952

these conditions may depend on examination of repeated blood smears and on the results of repeated sheep cell agglutination tests. False positive serologic reactions for syphilis may be encountered in infectious mononucleosis, and therefore treatment for syphilis should never be started on the basis of serologic tests alone. Thrombocytopenia, granulocytopenia, and anemia, alone or in combination, have occasionally been associated with infectious mononucleosis. The treatment is repeated transfusions." And he reminds us that "Hepatitis without jaundice is frequent in this disease, but obvious jaundice is relatively uncommon."

The summary and conclusions reached by the author are "(1) There is no specific therapeutic agent for infectious mononucleosis. (2) Sulfonamides and penicillin may benefit a complicating streptococcus throat infection. (3) Convalescent infectious mononucleosis and scarlet fever sera have given dramatic results in some seriously ill patients. (4) Human plasma and gamma globulin have occasionally appeared to be beneficial. (5) Aureomycin and Chloromycetin seem effective in some cases when started early in the disease. (6) Hepatitis is extremely common, and when severe should be treated exactly like cases of infectious hepatitis."

Now that the frequency of infectious mononucleosis is increasing, probably due in large part to better diagnosis, and now that the undoubted harm done by this disease is being better realized it is incumbent upon all practitioners to keep it constantly in mind. Kaufman has done well to call our attention to infectious mononucleosis and his article, though rather brief, is certainly highly informative and thought-provoking.

ATOMIC IODINE IN THYROID CONDITIONS

Radioactive iodine, which is obtained from the atomic pile at Oak Ridge, Tennessee, has become a sound and universally recognized treatment for hundreds of men and women who have been worn jittery and skeleton-thin by the punishing lash of an overactive thyroid-hyperthyroidism, or toxic goiter, a troublesome, but non-malignant condition.

It is now almost 10 years since the first thyrotoxic patients were treated with this

atomic medicine, and the August issue of *The American Journal of Roentgenology and Radium Therapy* states that "more and more evidence is accumulating that indicates this to be a highly effective mode of treatment."

Out of all the radioactive isotopes used in medical research and treatment, radioactive iodine has probably helped the most people. It has scored both as a tracer and as a treatment.

In *The American Journal of Roentgenology and Radium Therapy* a group of physicians from the Washington University School of Medicine, St. Louis, report their observations and results in the treatment of hyperthyroidism with radioactive iodine.

They said that 269 patients with hyperthyroidism were treated with radioactive iodine from May 1947 to September 1950, at the Mallinckrodt Institute of Radiology and Barnes Hospital, St. Louis. One hundred and ninety-five of these patients were followed for six months to three years.

"A satisfactory remission was obtained in 68 per cent," their article said, adding: "Twenty per cent of these now require some supplemental thyroid therapy. In the remaining 32 per cent evaluation has been impossible because of inadequate follow-up.

"We feel that the results have established a place for radioactive iodine in the treatment of selected cases of hyperthyroidism."

The success of radioactive iodine in thyroid work depends upon the amazing greediness of this organ for iodine—any kind of iodine. After a dose is given the iodine will soon be concentrated in the few ounces of butterfly-shaped gland in the neck, while the rest will be thinly distributed throughout the rest of the patient's body. A healthy thyroid takes up about 500 times as much iodine as does an equivalent amount of any other organ or tissue, an overactive thyroid 1,000 or 1,500 times as much. This is why a tracer dose of radioactive iodine will show quickly and accurately the state of the gland's health and activity.

If the tracer confirms the diagnosis of hyperthyroidism, the doctor gives a much larger dose. The radioactive atoms now race to the gland in destructive numbers and bombard it with short-range beta rays,

knocking out enough thyroid cells to reduce their harmful activity.

Since the atoms are concentrated in the gland itself and the beta rays travel only about an eighth of an inch, they do no harm to adjacent tissue.

This is one of the simplest and most precise bits of medical sharpshooting ever devised.

CORRESPONDENCE

FEDERAL SECURITY AGENCY

PUBLIC HEALTH SERVICE

Atlanta 5, Georgia

August 3, 1951

Dr. D. G. Gill
State Health Officer
State Department of Health
Montgomery, Alabama
Dear Dr. Gill:

Significant numbers of Armed Forces personnel from Korea are experiencing attacks of vivax malaria after their return to this country and while they are not under military supervision, i.e., while they are on leave or after separation. These individuals will undoubtedly be found in each State. Presumably these infections were acquired last fall though in some instances it is probable that symptoms were not manifested until this spring due to prolonged incubation or the effects of suppressive medication.

Therefore, the practicing physicians in your State should be warned (perhaps through your State medical journal) to suspect malaria among patients presenting suggestive signs and symptoms, and who have been in Korea during the last year. Definitive diagnosis should be based on the demonstration of malaria parasites in laboratories approved for this procedure by your State health department. The chances of discovering parasites are much better in thick blood films than in thin ones. Where blood findings are positive, controversial, or uncertain, the slides should be sent to the National Depository for Malaria Slides, Parasitology Laboratories, Communicable Disease Center, P. O. Box 185, Chamblee, Georgia, for further examination by non-governmental consultants.

Treatment with modern antimalarials now available (chloroquine, pentaquine, chlorguanide, etc.) will alleviate symptoms promptly. Certain of the cases receiving complete courses of these drugs will remain free from malaria, but it is probable that others will relapse after weeks or months. Patients should be told of this possibility and advised to seek medical treatment again if symptoms recur. The likelihood of clinical reactivation becomes less with the passage of time; relapses are rare after the second or third attack.

To prevent the spread of malaria from these individuals, cases should be reported to local health authorities promptly so that residual insecticides may be applied to houses within a mile

of parasite-positive persons if malaria vectors, *Anopheles quadrimaculatus* or *A. freeborni*, are known or found to be prevalent in the area.

If competent diagnosis, adequate treatment, prompt reporting, and preventive insecticiding are achieved, it is believed that the present freedom of this country from endemic malaria will be maintained.

It is hoped that you will bring this communication to the attention of the medical practitioners and health officers in your State.

Sincerely yours,

R. A. Vonderlehr

Medical Director in Charge

Psychological Problems of Aging—Opportunity for work is the crux of most problems in the economic sphere, and such opportunity is severely curtailed in old age, especially in times of economic depression. Luckily, older workers usually stand a fair chance of keeping their jobs, although they have a poorer chance of getting new ones. In spite of the fact that older people, in general, have greater difficulty in acquiring new occupational skills, especially when these are in conflict with well established habits, they do have certain assets which come with age—greater evenness of performance, less frequency of errors in performing a well established routine, and less tendency to quit their jobs. Where physical vigor is important, the older person may be at a disadvantage; where judgment and skill are required, he has the advantage.

Motivation is also an important factor. Strong motivation can compensate for loss of ability, so much so that in a given situation an old person may be more efficient in learning than a younger one. On the other hand, because of personality reactions to environmental pressures from without he may adopt an attitude of helplessness and be unable to use what ability he has. Old people are apt to develop feelings of lack of self-confidence and of personal inferiority. In our present industrial society old age brings lowered productive capacity, decreasing income, increasing need for support from children or social agencies, and a relegation to the status of "has been." It is no wonder, then, that loss of economic independence, especially in an already insecure person, contributes to exaggerated reactions of anxiety, tension, depression and helplessness. What is needed are new purposes and motivations at an age when it is most difficult to acquire them.

Retirement too often depends on an arbitrary age limit. Abrupt termination of active interests and occupations can have disastrous effects. The retired person misses the externally imposed routine; he loses familiar landmarks and points of reference, and his own sense of personal identity. Retirement is often treated like a graduation ceremony, with dinners, speeches, and tokens of esteem, but with this difference: The young graduate has his life yet to live; the man who is retired feels too often that he is through, that this is in a sense a funeral ceremony.—*Simon, California Med., Aug. '51.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

STRAWS, WIND, ET CETERA

W. A. Dozier, Jr.

Director of Public Relations

For some time now, many of us have been saying that federal participation in the form of grants-in-aid can, and eventually will, carry with it federal domination. On occasion we have been scoffed at, even though a ruling of the Supreme Court of the United States had made the course clear. As disheartening as it may be, even to us who have so argued, we and our viewpoint have been somewhat vindicated by a late ruling of the Federal Security Administration.

The facts in the case in which we are interested are given in the following quotation from a news article.

WASHINGTON, July 31—The federal government Tuesday shut off Indiana from federal welfare funds—money for the aged, blind, and dependent children.

Federal Security Administrator Oscar R. Ewing, a native of Indiana, announced the drastic decision and said it is effective at once.

He acted, he said, because he had no choice under a new Indiana law opening the names of welfare rolls to public inspection. A federal law requires that recipients of federal welfare funds be withheld from the public. Several other states have talked of a law similar to Indiana's.

The rest of the article, just to keep the records straight, dealt with amounts of money received and an Indiana Senator's remarks on the matter. Of course this action by F. S. A. can be overruled by the courts, but the fact remains that at present with present rulings in force it seems to be more or less settled.

An editorial in the Alabama Journal of August 1, 1951 states:

Oscar Ewing, socialized medicine advocate and bureaucrat extraordinary who runs the government's social security and welfare department, has given definite

warning to states that if they accept federal money they must expect to spend it as Uncle Sam says, or else.

He has withdrawn all federal security funds from Indiana because the legislature of that state thought proper to make it possible to look into the lists of those receiving welfare aid. Under the government rule which Ewing cites, all the welfare lists are secret; nobody can take a peek; no state can authorize anybody to look them over to see who is deserving of aid and who is imposing on the treasury.

Ewing declares accordingly that since the Indiana legislature has violated this federal rule by making it possible to uncover crooks and unworthy people on the lists, Indiana can have no more federal money to assist its program. Definitely and finally, the administrator has declared that a state which declines to toe the Ewing mark must be punished and its worthy welfare cases must suffer the consequences.

It is a sinister and a dark warning to others. It means that no state can look into its charity and welfare rolls. It implies that government money must be spent in the exact way the government says it must be spent. It threatens every state with bureaucratic rule on an unprecedented scale. It warns that states must be careful about the school money they accept from Uncle Sam, for Uncle Sam proposes to designate the way in which the money shall be spent. It threatens to reach into every fund that comes to the states. It means that highways must be built as Uncle Sam says; that health work must be conducted according to the rulings of the Washington bureaucrats; that public works must be according to bureaucratic specifications.

Self-respecting states will glory in Indiana's spunk and will be glad to see a test made of this subject. It is time to find out definitely whether this country is about to become a socialistic soviet with

all power centered in a few hands in Washington, or whether we are still to live under a constitution which guarantees certain rights to the states.

The interest of this article is not in whether the welfare rolls should be open or not. The only interest is in pointing out, plati-tudinous as it may be, one straw in the wind.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

SKIN CANCER

There are many kinds of cancer. There is hardly a part of the body immune to its deadly attack. The most frequently found type, however, is cancer of the skin, as is pointed out by Dr. Karl F. Kesmodel of Birmingham in his article on the subject appearing in this issue of the Journal. This type also has another distinction: It is the easiest to cure, the least likely to prove fatal.

Its comparatively ready response to treatment is not due altogether to any peculiarity of the skin as a cancer site. Important too is the fact that, being on the surface of the body, skin cancer is quickly observed. The skin is under almost constant view. Any marked changes occurring there are almost certain to be noticed soon. That means, in the case of skin cancer, that this condition is observed soon after it appears. If the victim acts with ordinary wisdom and intelligence, he will become concerned at once. And being concerned will cause him to go to his physician or a public health clinic. Thus, early discovery causes early treatment. And, with cancer as with other forms of illness, the chance of recovery is largely influenced by the promptness with which treatment starts after the onset of the condition.

Nevertheless, skin cancer is a serious disease. It is often even a fatal disease. It is, as already pointed out, a widely prevalent disease. Why is that? you may ask.

One reason is that skin cancer is often caused by harmless growths and skin defects like moles, warts, etc. And those are most widespread. Hardly anybody thinks of them as anything to be worried about. If

you were to inspect all your friends carefully, you would find few indeed who did not have from a few to a large number of such defects and growths. And the writer was not incorrect in referring to them a moment ago as harmless. For they are harmless. But they are also potentially dangerous. Just as the unexploded cartridge in a gun or pistol can be turned from a harmless piece of metal into an agency of death by carelessness or neglect, so the innocent-looking mole or wart can become a dangerous cancer if you neglect it or fail to treat it properly.

The change in a cartridge usually occurs instantly. That is not true of the change in a wart or mole. It occurs so slowly as to be almost unrecognizable at times. So all of us need to be cancer-conscious—not victims of cancer-phobia or hysteria but intelligent men and women capable of acting like adults in a situation of this kind. If we would do that, following our alertness with quick visits to our physicians or clinics whenever we find anything suspicious, we should have little to worry about as far as this disease is concerned. Great suffering would be avoided. Millions of people would be spared mental anguish of a most excruciating kind. And, best of all perhaps, about 95 skin cancer cases out of a hundred would be cured.

We need to be especially on the watch-out for one particular change that may indicate skin cancer. As youngsters we are constantly cutting ourselves with carelessly handled jackknives and in many other ways. We subject ourselves to various kinds of skin injuries in numerous other ways, from falling out of trees to being bitten by a pet animal. As we grow older such injuries usually become less frequent. But they continue, with industrial accidents taking a more prominent place among men and injuries resulting from household duties be-

coming more commonplace among women. But whether you have many skin and flesh injuries as a youngster or comparatively few as an adult, all of them normally have an important characteristic in common: They heal fairly rapidly. In a matter of hours for slight injuries and days for those not so slight, the injured place has healed. There may be scars that will last a long time, if not permanently. But, to all practical purposes, complete healing takes place. That, as I have said, refers to normal skin. But it does not apply to all skins. Occasionally victims of skin and flesh injuries find that healing does not take place as readily, rapidly or completely as that. And in those cases there may be cancer. It is true that various other conditions may cause healing to be abnormally slow. But, should that happen to you, give thought to the possibility of its being due to skin cancer. And let that possibility send you to your doctor or to a public health clinic. There you will find out definitely one way or the other. Particularly, do not "kid" yourself into thinking the sore will heal all right if you will use some paste or ointment on it. Some home treatments will change the appearance of the injury. Some may even make you think the injured place is looking better. But don't let yourself be misled. At a time like that, you need to begin treatment as soon as possible, if you really have cancer. If you don't have cancer, you owe it to your own peace of mind to end that gnawing anxiety as soon as you can.

The medical profession has learned a great deal about cancer in recent decades, and that march of progress is still under way. But the goal of complete knowledge is not yet in sight. Let us see what is more or less generally known about the type of cancer we are considering.

For one thing, it has been learned that skin cancer is more likely to attack older people than youngsters or young adults. Why this is true, we do not know. Nor are we sure about another significant fact regarding skin cancer, that it seems to occur more frequently in southern countries or regions than in those in the northern latitudes. (This may be traced in part at least to longer periods of exposure to sunlight in southern areas.) Adding substantial weight to the part played by prolonged exposure to

the sun is the unusually high skin cancer incidence among sailors, farmers and others who spend much of their working time out of doors.

You may have heard about the skin pigment which protects most people against sunburn. Those fortunate enough to have it also seem to possess a certain degree of protection against skin cancer. But, it need hardly be emphasized, this protection is only relative. It would be far from the truth to say that a person who has no trouble acquiring a good suntan has nothing to fear from skin cancer.

Generally speaking, people whose skins are light and ruddy are more susceptible than others to this disease. Conversely, those with dark skins appear to be decidedly less susceptible to it. Negroes, who are much more likely than white people to be attacked by tuberculosis, syphilis and other forms of illness, seem to get a "break" as far as skin cancer is concerned. They are by no means immune to it. But they seem to be less susceptible to it than the rest of us. (That of course is in line with the already-mentioned tendency of this disease to be more prevalent among those with ruddy and light skins.) Skin cancer also seems to be more prevalent among men than among women. (This may be explained by an important difference in their living habits. Housekeeping, school-teaching, typing, nursing and most other occupations for women usually involve indoor work, with only infrequent and incidental exposure to the sun's rays. But farming, construction work and other occupations primarily for men usually involve considerable exposure to the sun.)

But the sun is not the only enemy of skin health. The danger of skin cancer is increased by prolonged exposure to certain chemicals. Those who work constantly with x-rays need to be especially careful, lest over-long exposure bring on this disease. (It is one of the ironic tragedies of our times that several of those who have done so much to put the x-ray to work saving human lives have themselves developed cancer and died from it.) Ultra-violet light is also believed to have dangerous cancer-producing potentialities.

Mention of them is not intended to frighten those who work with x-rays, chemicals

and ultra-violet light. Protective measures and devices have been developed which make this danger virtually negligible. Those who avail themselves of these safeguards are relatively safe. But carelessness can be dangerous. Indeed it may be fatal.

Another factor in skin cancer seems rather far-fetched at first thought. That is tar. As long ago as 1775—that was the year before the Declaration of Independence—an English physician, more observant than others of his time, noticed that London's picturesque chimney sweeps were developing many more cases of cancer than would be expected among such a relatively small group. He properly attributed that to their constant exposure to soot. More recent studies have shown that exposure to coal tar, pitch, paraffin, certain types of lubricating oils and arsenicals tends to bring about changes in the skin which lay the groundwork for skin cancer. Forward-looking industrial concerns using or manufacturing such products are naturally doing all they can to protect their workmen against them. But much of the responsibility remains with the workmen themselves.

The form of the disease known as basal-cell cancer is the most common. It has the virtue of being unlikely to spread to other parts of the body. (Would that you could say the same about other forms of cancer!) It usually appears as a firm, small, translucent, gray bump on the skin. Most cases are found on the cheeks, forehead or nose. It frequently appears, however, on other exposed parts of the body, such as the backs of the hands. It is without pain, which is unfortunate, since pain is associated in most people's minds with danger. Another peculiarity of basal-cell cancer is that it almost never bleeds, which also tends to minimize fear of its danger. About the first indication the victim is likely to receive that there is anything wrong is the realization that it has changed size rapidly.

There is another form of basal-cell cancer of the skin. It is marked by a raised scaly patch, considerably darker than the rest of the skin. This bleeds readily upon being rubbed. Scratching also causes bleeding.

Either type of basal-cell cancer consists of a central ulcerated area surrounded by a raised, gray, pearly rim. It does not cause pain. And it will not heal, no matter what is done for it.

Epidermoid skin cancer is also widely prevalent. It usually looks very much like the basal-cell type we have just been considering. But it is more dangerous. For it has a tendency to spread to other parts of the body. It usually begins as a warty, crusty area on the skin. Often several such areas appear on the same person. The most common sites are the ear, the neck, the back of the hand. It is subject to infection and may develop a tenderness that becomes painful. Naturally, this type of cancer is more likely to attract attention than the other kind, painless and inconspicuous.

Now we come to the most serious form of skin cancer. But it has a virtue: it is comparatively rare. It is known as malignant melanoma. It starts spreading to other parts of the body in the early stages. Its origin is often a mole which is subjected to frequent, or constant, irritation or injury. This does not mean that every mole on your face or body is likely to become a malignant melanoma. The tan mole which most people have in varying numbers may be regarded as a negligible factor in skin cancer. It is the other kind—bluish-black or very dark brown—that almost always gives this form of skin cancer its start. But, remember, only a very small percentage of even these become cancerous. They need to be watched. Those who have this type of mole should be especially alert for what a writer once called "a dull, diffuse brownish zone spreading from it." Naturally, any mole that is constantly irritated, increases noticeably in size, turns darker or begins bleeding should cause a person to think of the possibility of skin cancer.

An anonymous spokesman for the National Cancer Institute of the U. S. Public Health Service some time ago summed up what needs to be done in order to find skin cancer in an early stage. In a leaflet on this disease, he wrote:

"Any increase in size, change in shape, deepening of color, bleeding or ulceration of a painless sore or mole which does not heal may be cancer unless proved otherwise. In short, any change in a persistent skin lesion is the red light—the warning signal—to warn you to consult a doctor at the earliest possible moment."

This is wise advice. All of us should follow it.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

June 1951

Examination for diphtheria bacilli and Vincent's	139
Agglutination tests (typhoid, Brill's and undulant fever)	1,246
Brucella cultures	19
Typhoid cultures (blood, feces and urine)	622
Examinations for malaria	426
Examinations for intestinal parasites	3,825
Serologic tests for syphilis (blood and spinal fluid)	24,567
Darkfield examinations	5
Examinations for gonococci	1,730
Examinations for tubercle bacilli	3,215
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	99
Water examinations	1,743
Milk and dairy products examinations	3,817
Miscellaneous	1,321
Total	42,774

* * *

July 1951

Examinations for diphtheria bacilli and Vincent's	202
Agglutination tests (typhoid, Brill's and undulant fever)	1,687
Typhoid cultures (blood, feces and urine)	772
Brucella cultures	4
Examinations for malaria	1,126
Examinations for intestinal parasites	4,007
Serologic tests for syphilis (blood and spinal fluid)	24,339
Darkfield examinations	5
Examinations for gonococci	1,872
Examinations for tubercle bacilli	3,191
Examinations for meningococci	3
Examinations for Negri bodies (microscopic)	108
Water examinations	1,843
Milk and dairy products examinations	4,102
Miscellaneous	2,273
Total	45,534

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1951

	May	June	E. E.* June
Typhoid and paratyphoid	10	11	8
Undulant fever	4	2	1
Meningitis	10	13	8
Scarlet fever	19	24	28
Whooping cough	253	176	170
Diphtheria	9	13	10
Tetanus	7	5	5
Tuberculosis	181	314	251
Tularemia	1	0	1
Amebic dysentery	1	2	1
Malaria	1	0	170
Influenza	654	87	61
Smallpox	0	1	0
Measles	972	721	312
Poliomyelitis	8	47	8
Encephalitis	2	4	0
Chickenpox	210	75	45
Typhus	7	4	23
Mumps	181	696	91
Cancer	423	396	223
Pellagra	2	2	3
Pneumonia	182	130	131
Syphilis	228	444	1356
Chancroid	11	7	19
Gonorrhea	262	352	594
Rabies—Human cases	0	0	0
Positive animal heads	26	26	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

enough they will unite. Distraction causes a marked delay in the healing of fractures but union will still take place if immobilization is prolonged. Even severe infection of a fracture is not a cause of non-union if immobilization is maintained.

What constitutes adequate immobilization?

One must remember that adequate immobilization does not necessarily mean absolute immobilization since immobilization may be secured by recumbency, by bandages or slings, by traction, by splints and by plaster of paris casts. The character of immobilization depends, a good deal, upon the type of fracture, the tendency to displacement of the fragments by muscle pull or gravity and also upon the choice of the surgeon.—Coyle, *Illinois M. J.*, July 1951.

The early or smoldering lesion (of tuberculousis) which is not causing symptoms of illness is a real challenge. The patient, doctor, nurse, laboratory scientist, all trained workers, and the general public need to make a special effort in diagnosis and treatment, with follow-up, patient education and guidance. These silent lesions are not limited to minimal cases, as trained workers all know. We are turning far too many of these patients over into the rocky shoals of the stream of health, lacking in understanding, guided by gossip opinion, incomplete diagnosis, and insufficient medical guidance after we have found them in our clinics or surveys—Grover C. Bellinger, M. D., *Bull. Nat. Tuberc. A.*, April 1951.

Fractures—When a bone is broken the object of treatment is to obtain union of the fragments in a good functional position with restoration of motion in the joints and power in the muscles of the limb in the shortest possible time. Union is usually most rapidly and surely obtained if the broken ends of the bones are in contact and immobilized until firmly united by callus.

Quoting Sir Reginald Watson-Jones, non-union of fractures is due to the failure of osteoblasts. The principal cause of non-union of closed fractures without interposition of soft tissue is inadequate immobilization. Impairment of blood supply may delay the process of repair but if fractures showing this delay are protected long

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR APRIL 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During April 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	6496	**	**	25.6	23.0	26.6
Total stillbirths	205	**	**	30.6	28.3	24.6
Deaths, stillbirths excluded	2253	1293	960	8.9	9.2	8.9
Infant deaths:						
under one year	208	106	102	32.0	41.2	42.2
under one month	146	83	63	22.5	28.0	27.4
Cause of Death						
Tuberculosis, 001-019	62	32	30	24.5	17.9	27.2
Syphilis, 020-029	16	2	14	6.3	6.0	4.8
Dysentery, 045-048	2	1	1	0.8	2.0	1.2
Diphtheria, 055						0.4
Whooping cough, 056	8	1	7	3.2	1.6	1.2
Meningococcal infec- tions, 057	3	1	2	1.2		0.8
Poliomyelitis, 080, 081	1	1		0.4		0.4
Measles, 085	4		4	1.6	1.2	5.2
Malaria, 110-117					0.8	
Malignant neoplasms, 140-200, 202, 203†	197	135	62	77.8	97.0	78.9
Diabetes mellitus, 260	24	16	8	9.5	11.5	12.0
Fellagra, 281	4	4		1.6	0.4	1.2
Vascular lesions of central nervous system, 330-334	306	160	146	120.8	97.4	102.5
Other diseases of nervous system, 300-318, 340-398	25	15	10	9.9	14.3	14.4
Rheumatic fever, 400- 402	3	1	2	1.2	1.2	2.0
Diseases of the heart, 410-443	681	417	264	268.9	284.7	262.3
Diseases of the arteries, 450-456	24	16	8	9.5	10.7	7.2
Other diseases of the circulatory system, 444-447, 460-468	26	13	13	10.3	12.3	14.4
Influenza, 480-483	67	32	35	26.4	16.3	14.0
Pneumonia, 490-493	120	61	59	47.4	43.3	38.8
Bronchitis, 500-502	4	3	1	1.6		1.6
Appendicitis, 550-553	2	1	1	0.8	1.2	3.2
Intestinal obstruction and hernia, 560, 561, 570	8	5	3	3.2	2.0	7.6
Gastro-enteritis and colitis (under 2) 571.0, 764	9	2	7	3.6	3.2	2.8
Cirrhosis of liver, 581	15	12	3	5.9	4.0	4.0
Diseases of pregnancy and childbirth, 640-689	12	2	10	17.9	15.2	17.6
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2	1	1	3.0	3.4	5.9
Congenital malforma- tions, 750-759	25	14	11	3.8	3.5	4.8
Accidental deaths, total 800-962	143	107	145	56.5	64.8	54.5
Motor vehicle acci- dents, 810-835, 960	73	63	10	28.8	26.6	21.6
All other defined causes	365	212	153	144.1	162.6	161.4
Ill-defined and un- known causes, 780, 793, 795	95	26	69	37.5	48.1	51.3

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the April reports of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

Medicine in an Industrial Society—The methods of medical study applied to groups of persons and to environmental conditions, and the procedures which have been employed in the appraisal of environmental factors which contribute to human health and disease, are known to some degree by the modern student of medicine, but are not generally represented in the armamentarium of the practicing physician. So concerned has the latter been with illness and injury and with the proper care of the sick and injured, that he has generally ignored, when he has not resented, the practice of preventive medicine. It is not surprising, therefore, that the efforts of the practicing physician have been confined largely to the curative aspects of industrial medicine, or as it has been called so often and so significantly, industrial surgery. Such a limitation of vision and interest is, however, a most unfortunate situation in an industrial society, as it has been in earlier periods and still is in a society that has continued to congregate in communities of ever-growing size and complexity. Not infrequently, under appropriate conditions and circumstances, ranging from the ubiquity of disease vectors in a backward or primitive area to the multiplication of air-borne, water-borne or food-borne diseases in a heavily populated community, curative medicine has found itself bogged down in futility in the midst of overwhelming numbers of the sick and dying. Curative medicine stands on the very threshold of failure, when the stark and insidious physical and mental hazards of a technologically clever but socially reckless people grow in endless variety and to ever larger proportions in factories, offices, highways and homes, and when the conditions and conventions of professional practice are such that the majority of the citizens of the nation lack the medical and hygienic guidance that could promote their bodily security and their social responsibility. What is required urgently, as a first and salutary step in this direction, is the application of the methods and disciplines of preventive medicine and public health, with some necessary but not fundamental modification, in the field of industrial health. Physicians, in large numbers, must acquire the viewpoint and the familiarity with the methods which will enable them to take their part in the mastery of the hazards of the industrial environment and those which spread from this environment into the entire community. They must learn their part in this task, and they must be capable, as have physicians in the field of public health, of fitting easily and naturally into the company of those with whom they must work. Preventive medicine in industry, in addition to clinical medicine, is made up of precise and first-hand knowledge of industrial environmental factors and of the physiological limitations within which human experience in relation to such factors, individually and collectively, is compatible with the health and well-being of individuals and groups of individuals.—*Kehoe, Industrial Med. & Surg., Aug. '51.*

BOOK ABSTRACTS AND REVIEWS

An Atlas of Human Anatomy. By Barry J. Anson, Ph. D., Professor of Anatomy, Northwestern University Medical School. Cloth. Price, \$11.50. Pp. 518. Philadelphia and London: W. B. Saunders Company, 1950.

The subject matter consists of 504 pages. By far the greater portion of the book is occupied by illustrations, usually in serial arrangement. The descriptive portion of the book at times seems sketchy. The illustrations are, on the whole, well done but a few of them seem rather obscure. There are a number of reproductions from articles appearing in journals of the preclinical and clinical sciences. Contributions from a number of authors are included. It would seem to the reviewer that the greatest value of the book would be a reference for medical students. It is not felt that it could be considered as a substitute for the more detailed texts on anatomy.

John L. Branch, M. D.

Master Your Mind. By Samuel Kahn, M. D., Ph. D. Cloth. Pp. 249. New York: Rockport Press, Inc., 1951.

At the close of this small volume, the reader may find himself impelled to organize, elaborate and possibly improve his slovenly study habits, but he would find himself at a discouraging distance from the mastery of his mind. The human mind, a willful contrivance, having resisted some mighty impressive forces and assaults, will probably not yield completely to the publisher's stratagem of the exclamation point in the title.

The dust jacket proclaims the book's value for "Students, teachers, businessmen, parents, social workers and other intelligent (sic!) readers." If intelligence is a distinguishing mark of such people (a rather amazing assumption), the author fails to flatter that intelligence in prescribing in childish detail the equipment for note-taking, the number of fountain pens, the color of ink, the size of the note-paper, the kind of note-book cover, even adding "Be sure that the rings open and close freely." If our literate and intelligent reader is unimpressed by the opinions (and degrees) of "Professor Van Dearborn (M. S., Harvard; M. D., Ph. D., Columbia)" who "stresses the importance of taking notes," his blind resistance will melt to a quivering mass of gelatinous acquiescence when he heads the ne plus ultra of clinchers provided by "Sir John Adams (LL. D., Professor of Education at the University of London)" whose opinion is paraphrased, "One can make the best of his mind, if he takes thorough notes." Treated in this cavalier fashion in one chapter on "How to Take Good Notes," the reader is confronted in a later chapter with such undefined and classified terms as "anal, oral and urethral eroticism." Apparently he is expected

to consult some neighborhood library if he wants to know what that means.

The greatest portion of the book is devoted to a review of efficient and tried methods of study with considerable attention applied to the dynamics of these methods. Chapters on the learning process, the use of the library, and aids to memory give practical suggestions to lighten the load of the high school student and college freshman. When the author wanders (with questionable pertinency) into child guidance, the book's value becomes somewhat dilute.

Philip S. Bazar, M. D.

Physician's Handbook. By Marcus A. Drupp, M. D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine; Norman J. Sweet, M. D., Assistant Professor of Medicine, University of California School of Medicine; Ernest Jawetz, Ph. D., M. D., Associate Professor of Bacteriology and Lecturer in Medicine and Pediatrics, University of California School of Medicine; and Charles D. Armstrong, M. D., Clinical Instructor in Medicine, Stanford University School of Medicine. Cloth. Price, \$2.50. Pp. 365. Palo Alto, Calif.: University Medical Publishers, 1951.

The amazing thing about this book is the amount of information which it contains. It has a unique index that enables one to find the desired information rapidly. Everything is covered from diagnosis and treatment to laboratory procedures. It has numerous charts giving normal and abnormal values.

This is a very excellent, compact book which may serve as a ready reference giving compact, brief information.

Charles A. Willis, M. D.

Electroencephalography in Clinical Practice. By Robert S. Schwab, M. D., Director of the Brain Wave Laboratory, Massachusetts General Hospital, and Associate in Neurology, Harvard Medical School. Cloth. Price, \$6.50. Pp. 195. Philadelphia and London: W. B. Saunders Company, 1951.

Electroencephalography, a precocious child in the Medical Family, has in its young life not only discarded the swaddling clothes and lisp of infancy but, judged by the impressive list of its accomplishments, has attained a maturity out of keeping with its tender years. As the chapter describing its historical development will remind the reader, it has, as have so many other medical developments, passed through its period of discovery, neglect and oblivion, rediscovery, honest scepticism and resistance and finally unqualified acceptance. We are reminded here again that so much in the proud history of medicine has

evolved either because of or despite the odd twists of fortune. Had the experimental results of a medical student at Harvard in 1918 been extended, the development of this science would have been shortened by that period before Berger rediscovered the rhythmicity of the electrical currents of the brain. In the short space of time to the present and despite the intervention of World War II, electroencephalography has accumulated a wide and enthusiastic literature, both periodical and textual, a large number of national and international societies, unending refinements in mechanical equipment and techniques, including several electronic analysers, healthy but confusing controversies as we find between the proponents of the monopolar and bipolar leads and, perhaps as a surer mark of its worldly maturity, the ethical dilemma of the Ph. D. or the M. D. in the interpretation of the clinical electroencephalogram.

This book is not written as a text or as a laboratory manual. It is a short orientation for psychiatrists, neurologists, internists and neurosurgeons, intended as a stimulant to widen an interest and understanding of its potential and real value as a diagnostic aid.

The first two chapters are preliminary, consisting of the historical summary and the simple integration of neurophysiology with electroen-

cephalography. Chapter three deals with the normal and abnormal encephalogram. The classification of various wave configurations are presented briefly yet lucidly; divergences from normal patterns are pointed up, to be taken up in more detail in later chapters. Chapter four on technique is perhaps more detailed than one would expect of a book that is not written for the encephalographer. Certainly the author must have had the beginner in this field in mind when he wrote this chapter.

Succeeding chapters deal with the clinical application of the encephalogram in epilepsy, in neurological, neurosurgical and psychiatric problems. The growing use of this aid in these fields is emphasized, although hardly exhausted. A final chapter on the executive considerations of establishing a laboratory scans the matters of organization, staff, records and interpretation. The glossary is excellent.

The style is simple without being patronizing. The material is condensed, yet without significant omissions. The illustrations are plentiful, clear, and truly illustrative. This is a competent work by a recognized authority who has written with restrained enthusiasm yet with clarity and with disarming simplicity. It is highly recommended.

Philip S. Bazar, M. D.

AMERICAN MEDICAL ASSOCIATION NEWS

OLD-FASHIONED STOMACH-ACHE MAY BE FORM OF EPILEPSY

When Junior complains of a stomach-ache, it may not be the result of eating the well-known "green apple." Instead, it may be a form of epilepsy, according to a report in the September 1 Journal of the American Medical Association.

A study of 31 children suffering from recurring, knife-like pains in the center of the abdomen over a period of years was presented by Drs. Paul F. A. Hoefer, Sidney M. Cohen and David McL. Greeley, of New York City.

Electroencephalographic studies of the children showed definite abnormalities in 30 of them and a "borderline normal" record in one, the report disclosed.

"An over-all incidence of abnormal electroencephalogram activity, both specific and nonspecific of almost 97 per cent, as found in our patients, must be considered positive evidence of the cerebral and presumably paroxysmal origin of this particular disease

entity," the report stated. "The figure compares well with those obtained in highly selected groups of established epileptics in our own and other laboratories."

Candid epileptic manifestations occurred in nine of the group, the survey disclosed. Four patients had attacks preceding the onset of the abdominal pain. All four still experience epileptic seizures; only one no longer has abdominal pains. Five other patients began having epileptic seizures several years after the onset of the abdominal pains.

According to the report, the abdominal pains lasted from a few minutes to several hours. Some of the pains were accompanied by nausea, vomiting, diarrhea, constipation, headache, fever, drooling, sweating, or brief periods of unconsciousness. Sixteen of the children fell asleep after an attack of abdominal pain "no matter what time it occurred and slept for several hours even in the middle of the day."

Seventeen of the children, the report stated, showed an abnormal degree of irritability and other behavior disorders, and 12 had

such disturbances as instability of blood pressure and flushing.

Twenty-one of the patients were under treatment and observation for periods up to 10 years, the article said. Two of the group died, one in an accident. In nine of the 21 children, attacks of abdominal pain subsided completely at adolescence. In five others, distinct improvement was found in that the attacks recurred much less often and were much milder. The conditions of the remaining five became worse.

ANOTHER ANTIBIOTIC PROMISING IN TREATMENT OF HEART CONDITION

Bacitracin, an antibiotic, has been added to the list of drugs which hold promise in the treatment of staphylococcic endocarditis, a heart condition caused by bacterial infection. The disease, if not brought under control, usually runs a complete and fatal course within four weeks.

A report of the use of bacitracin, in conjunction with other antibiotics, with an effective result was made in the September 1 Journal of the American Medical Association. The authors of the article, Drs. Charles K. Friedberg and Mortimer E. Bader, of Mount Sinai Hospital, New York City, stressed that while the course of the disease in their one case was not stopped by the use of penicillin, aureomycin and chloramphenicol, it was impossible to say to what extent recovery was due to bacitracin because the use of the other antibiotics was continued.

However, they expressed the opinion that this was the first instance "in which recovery from this disease may be credited largely, if not entirely, to the use of bacitracin."

"The cure in the case presented here merits particular attention because the clinical manifestations were extremely severe and control of the infection had not been attained despite two weeks of treatment with massive doses of penicillin, aureomycin, and chloramphenicol," the report stated.

The case described in the report involved a 28-year-old man who entered the hospital acutely ill, despite two weeks of treatment with antibiotics. During the first four days he was in the hospital, the patient received additional large doses of antibiotics, but his

condition failed to show any marked improvement, according to the report.

On the fifth day, the article stated, the patient was given intramuscular injections of bacitracin in addition to penicillin and aureomycin. Laboratory tests indicated that it might be more effective, and, because of the gravity of the case, it was decided to use the drug despite reports of adverse effects on the kidneys in some instances.

Immediate improvement was noted with no after-effects from the bacitracin. After a week, the dosage was reduced, and seven and one-half days later, discontinued. Penicillin was maintained.

The patient was discharged after 56 days of hospitalization, and a check five months later showed him to be in good health.

Because of the use of the other antibiotics, the report pointed out, it is difficult to determine accurately the relative importance of bacitracin in effecting the recovery. Whether the penicillin-aureomycin or the bacitracin treatment alone would have effected a cure is uncertain, it was added.

"With respect to staphylococcic infections in general and staphylococcic endocarditis in particular, the availability of bacitracin as an effective antibiotic is especially timely," the report declared.

"An increasing number of reports indicate that more and more strains of staphylococci are becoming resistant to penicillin, hitherto the preferred antibiotic against staphylococci."

There has also been noted a resistance to aureomycin, used after penicillin has failed, the report stated.

NEW DRUG FOUND SUCCESSFUL IN TREAT- MENT OF EPILEPSY

The use of phenacemide (trade name: phenurone) in the treatment of epilepsy has proved successful in relieving certain patients of seizures which have not been affected by other antiepileptic drugs known at the present time, according to an article in the September 1 Journal of the American Medical Association.

The authors are Drs. Mary W. Tyler, of the department of clinical investigation of Abbott Laboratories, North Chicago, Ill., and Ernest Q. King, of the medical division of the Food and Drug Administration.

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THE JUVENILE AMPUTEE

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The juvenile amputee presents a problem, or rather a group of related problems, rarely fully understood; and, still more rarely, constructively handled. For years the medical profession and lay public alike have extended to the amputee their deepest sympathy, and the author, as an amputee since early childhood, can speak with some authority that sympathy as such not only fails to be helpful but is actually harmful. The amputee needs help, certainly in the early stages. He needs constructive guidance, supervision, reassurance, adequate prosthesis and instruction, but not sympathy. The juvenile amputee presents even more difficult problems than the adult because of presence of growth and reliance on those older to help in his development.

A review of the reference shelves at the Medical School in Birmingham contributed practically nothing as regards the juvenile amputee; this despite the fact voluminous information was available with regard to the adult. This review included texts used by students on surgery, orthopedics, pediatrics, and physical medicine. Unfortunately, the reference systems in these same fields were likewise virtually barren. Only a few logically presented discussions were found in the English literature published in the last twenty-eight years, and all were incomplete.

Must it be assumed that this is a rare condition when it occurs in the child? This is certainly not the case. The Crippled Chil-

dren's Service of Alabama in 1950 furnished thirty-one new prostheses through the artificial limb companies in Birmingham, as well as a few furnished through Montgomery. Inasmuch as the average life of a limb is over three years, there must be at least 100 such cases being serviced by the Crippled Children's Service in Alabama today; to say nothing of those being procured by private funds. The record room at the Jefferson-Hillman Hospital, which does not include any cases of the Crippled Children's Service, showed ten major amputation cases under the age of twenty compared to eighty-four in adults during the last five years. The inclusion of fingers and toes would raise the totals to eighteen in children and one hundred fourteen in adults. This is not a rare condition. More startling figures are, however, available in the literature. From Oklahoma a follow-up of seventy cases was reported in 1939. The authors of this survey, Colonna and vom Saal, were using amputees either at the University Hospital or from the Crippled Children's Hospital. Over half lost limbs between the ages of ten and twenty.

Such figures, alone, while substantial, are not amazing until we note that the National Research Council reported only 20,500 amputees in World War II, as compared to 120,000 civilian cases. If the proportion listed above should hold true, at least half as many children and possibly more lose their limbs each year as do soldiers in time of war. This cannot be considered an insignificant problem. Unfortunately, most of the literature on amputees comes from

Read before the Association in annual session, Mobile, April 20, 1951.

those with vast and perhaps biased war experience.

So far in this paper the author has tried to impress on you that this is a prevalent condition scarcely mentioned in the literature. Is it then a simple problem without many facets? The child is an individual, a growing and developing individual, one with a life before him which can easily be warped. Furthermore, the child is relatively irresponsible and must have guidance. Unfortunately, many of these children lose limbs as the result of accidents, sometimes preventable accidents. These accidents are common in rural areas from farm machinery; they will probably become more common as farm machine usage increases. Not too infrequently some element of parental neglect may contribute to the loss of a limb; this is not constant; all strata of society may be so affected. Too often, however, the burden of care rests solely on a state agency, the artificial limb maker, and the parents, with little help from local health and educational authorities. It is the civic duty as well as professional responsibility of all of us as physicians to watch for possible breaks in the relatively loose links mentioned above. Naturally, the family physician knows more of the possibility of neglect than any other health authority. The teachers, likewise, should watch for untoward developments.

It is true that, in Alabama, limbs are furnished to the child whose family cannot afford them; and an effort is made by the Crippled Children's Service to follow the child by mail, in clinics, and by field workers. However, funds are limited, and without parental cooperation neglect in some cases is inevitable unless local health agencies are alert.

As a child grows, a lower extremity prosthesis must be lengthened or there is a real likelihood of structural scoliosis which may lead to lumbosacral strain or even nerve root impingement. Occasionally, children appear for lengthenings of $1\frac{1}{2}$ " to 2", though such a shortening produces a profound effect on posture and cannot always be corrected in a single stage. Lengthenings should be made at any time a leg becomes over $\frac{1}{2}$ " short. Anyone with a few thin books, magazines, or prescription pads can check to see if a limb is too short. It is

true, though, as far as the author could ascertain, not reported in the literature, that early juvenile amputees will frequently develop such marked changes in their pelvises that any given bony landmark may be inaccurate for measurement.



Fig. 1

Figure 1 shows the pelvis of an adult, age thirty-three, who has worn a prosthesis twenty-seven years. It can be noted that, when the ischial tuberosities are level, the hip joints or superior aspects of the trochanters are not on the same plane. This also applies to the iliac crests. When the hips are level there is a tilt to the sacrum. Surely, accurate estimate as to length should be checked, with the patient stripped to check spinous processes, sacro-iliac dimples, and the patient as a whole. The demineralization of the entire right side of the pelvis can be noted, and the peculiarly shaped upper end of the right femur, with marked prominence of the lesser trochanter, is interesting; as is the relative valgus of the opposite hip. You will note in figure 2 that there is some pelvic tilt and mild scoliosis with the prosthesis worn. Most above-knee amputees desire their prosthesis slightly shorter than the opposite leg for ease in ambulation.

Another case with a left Chopart amputation, usually a condemned procedure but in this case satisfactory to the patient, was recently seen by the author. This patient, age fifty-three, was suffering from low back pain with sciatica on the right. Measure-



Fig. 2

ments showed 1½" shortening of the left leg compared to the right. His prosthesis, which had enabled him to work normally in a textile mill for the past nineteen years, only added 1" to the length of the leg. This patient lost his forefoot at the age of eleven. A slight lift to his left shoe, with minor sole and heel correction to help stabilize the opposite foot which was pronated, completely relieved his back and leg symptoms. This patient is able to walk to the bathroom without his prosthesis. His prosthesis is conspicuous and not suitable for a female, but certainly in this case the result proved that



Fig. 3

a Chopart was not an ill-advised procedure. X-rays of this case, figure 3, are interesting in that they do show the complete equinus of the calcaneus, which is so objectionable in most cases. However, in this patient, with his shortening, the fault is minimized.

Mention must be made that a child has remarkable potentialities for recovery. Amputation must be used only as a last resort, in order to preserve life or improve function by allowing substitution of a prosthesis, in the lower extremity, for a limb which can never, even with the best of care, perform the function of weight bearing as well as a prosthesis. No prosthesis in the upper extremity can add a sense of touch, and here one cannot be too conservative.



Fig. 4

Figure 4 shows the foot of a child, aged ten, largely blasted away by a shotgun. In an adult this foot would almost certainly have had to be amputated, but this child is walking to school daily without prosthesis, figure 5, and, after further surgery contemplated for the holiday season, should have an even more satisfactory foot.

It is worth noting at this time that juvenile amputees, in both lower and upper extremities, do frequently have complications because of growth, as well as lack of growth. In the below-knee amputee, future bone

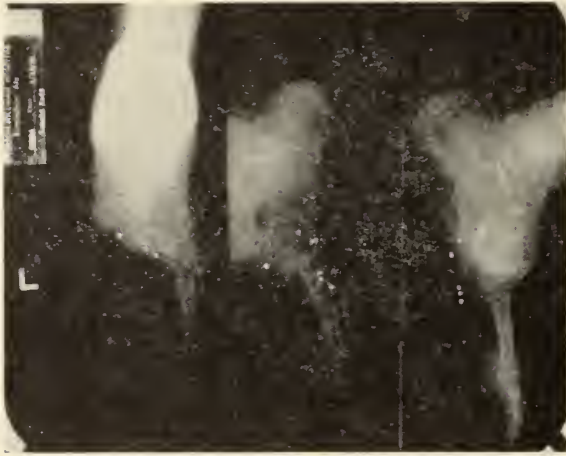


Fig. 5

growth frequently necessitates the need for re-amputation, because the major growth is from the proximal epiphyses; the tibia, and especially the fibula, frequently protrudes through the soft skin or scar at the end of the stump. This complication is found much less frequently in the femur where the distal epiphysis accounts for about 80 per cent of the growth in length. In the upper extremity, growth does occur at the proximal end of the humerus, and this complication is again quite frequent. Vom Saal has advocated epiphysiodesis to eradicate this complication. He reported 16 cases of 20 below-knee juvenile amputees requiring re-amputation.

A third complication which occurs because of growth can be exemplified by the case history of the amputee whose x-rays were first shown. In 1924, his stump, measured from perineum, was $4\frac{3}{4}$ " in length; the length of the opposite femur was $9\frac{1}{2}$ " from the same point. In 1951, the measurements were 5" and 17" respectively. At amputation the stump was exactly mid-shaft with respect to function; now it is well in the upper third. This is far shorter than the site of election; and it can be seen that, in the very young, care must be made to preserve all the femoral length possible. Indeed, several authorities advise knee joint disarticulation when possible, in order to save the epiphysis and the broad end of the bone with the thick prepatellar skin covering. In this connection, it is interesting to return to our first case and observe the stump, figure 6. Obviously the femur has grown about the head and neck. Amputation was at the age of five, but the pelvis has



Fig. 6

grown about equally as fast as the femur. While noting this x-ray you may be able to detect the large spur. This has never been in the least symptomatic though spurs may necessitate re-amputation.

While discussing growth, the author wishes to stress a related point. Most authorities, including artificial limb makers, advocate the use of wooden prostheses for children. Such limbs are durable, resilient, easily modified and lengthened; they are made of soft wood, English willow most frequently. This is covered by wet raw hide which prevents splitting and greatly strengthens the limb after drying. Unfortunately, the wood, raw hide, leather straps, and foot upholstery are all destroyed by prolonged moisture. Children can and do easily destroy limbs by keeping on wet shoes or wading with them on. We must emphasize to the parents how to avoid this needless destruction. Both companies of limb manufacturers in Birmingham stress this as the most wasteful practice of the childhood amputee.

Another extremely important and inadequately stressed factor as to growth is the importance of early limb fitting. The asymmetry of the pelvis previously shown would unquestionably have been greater had not a prosthesis been fitted shortly after amputation. Not many years ago some felt it was better for an artificial leg to be omitted until growth was complete—nothing is further from the truth; about this practically all authorities agree. Children with congenital amputations have been fitted as early as eleven months and walked at the normal age. Even in Birmingham, a leg has been

furnished as early as fourteen months and an arm at two years. If amputation is unilateral, below the knee, growth of the remaining part is definitely stimulated by use; and approximate equality in position of the knee can best be assured by early use of the amputated part. Wide disagreement exists as to proper age to fit upper extremity prosthesis; but, unquestionably, it should be earlier with the bilateral amputee. Condition of stump after long disuse is such as to make eventual limb fitting extremely difficult, and, if a child becomes completely used to crutches, virtually impossible. Prolonged use of crutches may also cause scoliosis or elevated scapulae.

Another factor, demanding more stress, is the need for proper hygiene with respect to the stump. Stump socks are usually made of thick wool. Personally, the author is irritated by wool, and his socks are largely composed of cotton; several thicknesses and materials are available. The author personally would not think of having less than twelve socks even though he uses only one at a time because of the difficulty in washing and drying in damp weather. Many individuals have to wear two of these socks after their stump shrinks, or they loose weight. Daily changes are essential to prevent skin irritation. Individuals who have any degree of hyperhydrosis may need to change more frequently, especially in damp, hot weather or when playing or working hard. The State usually only furnishes three socks, but may furnish more on request. It may well take considerable help from the family physician, or pediatrician, to convince an overworked mother that daily washings of the socks are essential; and, inasmuch as stumps are delicate, at least three rinses to remove soap seem essential, if soap is used. Minor skin irritations on the stump may prove serious. Pressure irritation of the socket, which can and will be remedied by the limb manufacturer with ease, is not the least common cause.

No specific mention was seen in the literature with regard to severe foot strain or even more serious trouble in the opposite foot though it is extremely important to discover signs of this early and it should be watched for. It is not uncommon. Obesity must be avoided, not only in this respect but also because it complicates socket fit.

Educational help and vocational guidance, likewise, are of extreme importance. The State Rehabilitation Service stands ready at the age of sixteen to help in this field with respect to college education and specialized vocational assistance; but, at a far earlier age, the child should be guided away from such occupations as forestry or any other work involving prolonged walking or standing, though it is true some are able to perform such duties. The author has known ex-juvenile amputees who have worked in coal mines, were surgeons, and even one who was a lumberjack, and later an ice-delivery man—these, however, are the exceptions rather than the rule. Guidance must be by leading, rather than by dictum, as frequently an overcompensated child is perverse enough to prove you wrong, even to their own detriment.

Still another factor of extreme importance is virtually completely ignored in the literature, especially by those most qualified to speak. This is the psychologic and psychiatric problem of the juvenile amputee. It is said children adjust extremely well to amputation; nevertheless, other competent authorities issue specific warnings. Henry Kessler has said that childhood amputees require close supervision and early fittings, or they "may be retarded socially, psychologically and educationally." Earle H. Daniel, and particularly Atha Thomas, emphasizes this fact. In addition, the earliest book the author found on this subject of prosthesis, published in 1905, specifically mentions this problem. I feel sure we forget because the twig is merely bent, and not broken as so often is the case in the adult, that, as Pope has said, "As the twig is bent the tree's inclined," and late gross psychologic problems, long dormant, may make their full appearance late in life. It is amazing that no psychiatrist has written on this vast problem, at least not by title in the English language, during the last twenty-eight years, as revealed by a review of the *Index Medicus*. It is true a very comprehensive study was made of adults during the past war; and, surprisingly enough, the youngest unmarried adults had the most difficulty with adjustment. In this matter, the author as a juvenile amputee would like to register a plea against indiscriminate use of the terms cripple, crippled, lame, and disabled, as each

carries some stigmata, and their definition in *Webster's Unabridged Dictionary* is such that he would thank you not to apply such terms to him.

SUMMARY AND CONCLUSIONS

In summary, the author presents to you a greatly neglected problem with many facets requiring close supervision:

1. Those problems related to growth of the opposite extremity requiring frequent lengthenings and close supervision.

2. Those of asymmetry of the growth of the trunk demanding early use of prosthesis in the lower extremity amputees and vastly complicating problem one which is so often dealt with only by the limb fitter.

3. Those problems related to growth of the amputated extremity, frequently requiring further surgery or special initial surgery.

4. Those complications of probable lack of future growth of the amputated extremity.

5. There is the necessity for early limb fitting, especially in the lower extremity.

6. There are the factors of stump hygiene and the importance of parental understanding.

7. Special care must be made of the opposite extremity to prevent foot strain, and obesity is especially to be avoided.

8. The necessity for guidance and understanding in educational and vocational matters on the local level.

9. The extreme importance of psychologic, and at times psychiatric, help with these children while they make their adjustment to society; above all, trying to help them make themselves into independent, useful citizens, instead of misplacing sympathy and encouraging self-sympathy.

It is to be remembered that it is the lower extremity that is involved in 75 per cent of all amputees. These cases are most apt to obtain useful assistance from prosthesis, and they present the group which include all the above problems.

Here is the problem briefly surveyed, which has been shown to be far from simple, and, even though numerically and economically of extreme importance, has been so neglected in the medical literature. It presents a challenge for much deeper study by

all branches of the medical profession, especially by orthopedists, psychiatrists, pediatricians, doctors of physical medicine, and, last but not least, the family physician.

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AMEBIASIS IN NORTHWEST ALABAMA

HARRY V. HERNDON, M. D.

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Amebiasis was once considered to be a disease of tropical and subtropical climates. In recent years, surveys have shown amebiasis to be of major importance in almost every section of the United States. Craig and Foust¹ tabulated forty surveys from many sections of the United States showing the incidence of amebiasis to vary from 1.4% in college students at Dartmouth to 55.5% of individuals in an orphans' home in New Orleans, with the average of these surveys being 8.1%. Birnkrant, Greenberg and Most² reported an incidence of amebiasis of 11.5% of 1,917 inmates and employees of a hospital for the insane in New York. In the Albany, New York area other workers³ found an incidence of 9.1% of 350 persons examined. In North Carolina a recent survey⁴ showed an incidence of 12.7% of 2,522 hospital patients and 31.6% of 878 veterans seen in a tropical disease clinic. In a Memphis hospital a survey revealed 17.0% of 246 persons to have amebiasis.⁵ In Evans-ton, Illinois, Snorf and others⁶ found *E. histolytica* in 2.0% of 200 asymptomatic patients and in 4.31% of 325 patients with gastro-intestinal complaints. Wright,⁷ in a sta-

tistical survey of amebiasis, believes there has been an increase in the incidence of amebiasis and/or amebic dysentery in the United States during the past 15 years. He calls attention to the fact, however, that many states require the reporting only of amebic dysentery, which is an uncommon form of this disease in the United States. Public health statistics, therefore, do not present a complete picture of the problem.

The results of these surveys show that amebiasis is found where it is looked for and North Alabama is no exception. At the Florence Clinic, Florence, Alabama, during the calendar year 1947, 20 stool specimens were examined and no case of amebiasis was found. In 1948, 118 specimens were examined and 5 cases were discovered. In 1949, 998 specimens were examined and 69 cases were found, and in 1950, 1,641 specimens were examined and 223 cases were found. From October 1948 through December 1950, 297 cases of amebiasis were found, while during the preceding 21 months no case of amebiasis had been recorded in the laboratory files.

The symptomatology of amebiasis is extremely variable. Though most cases have symptoms referable to the colon, we rarely see a case with frank dysentery. Most commonly, we find intermittent loose stools with or without constipation. In many cases the patient will give the history of passing mucus in the stools and occasionally streaks of blood. Constipation is a frequent presenting symptom. Mild abdominal pain and tenderness in either the right or left lower quadrants are frequently noted. The diagnosis of amebiasis is often made in persons who have previously been considered to have a spastic colon. Occasionally there is pain in the epigastrium, and peptic ulcer may have been suspected in these cases. Nervousness and flatulence are very common.

Frank amebic hepatitis and liver abscess, as manifested by a large tender liver associated with fever and leukocytosis, are uncommon. However, pain and tenderness in the right upper quadrant are noted frequently without fever and leukocytosis.

Read before the Association in annual session, Mobile, April 19, 1951.

1. Craig, C. F., and Foust, E. C.: Clinical Parasitology, ed. 5, Lea and Febiger, Philadelphia, 1951.

2. Birnkrant, W. B.; Greenberg, M., and Most, H.: Amebiasis in a Hospital for the Insane, Am. J. Pub. Health 35: 805, 1945.

3. Towse, R. C.; Berberian, D. A., and Dennis, E. W.: The Incidence of Amebiasis in the Albany (New York) Area, N. Y. State J. Med. 50: 2035, 1950.

4. Mackie, T. T.; Tuttle, R. L., and Simpson, T. W.: Amebiasis in Civilian Hospital and Veteran Patients in North Carolina, South. M. J. 43: 313, 1950.

5. Anderson, H. H.; Johnstone, H. G.; Packer, H.; Young, J. D.; Callison, M. K.; Hambly, A. S., Jr.; Anderson, J. Van D., and Reed, R. K.: Incidence and Control of Amebiasis and Other Intestinal Protozoan Infections in a Memphis Hospital, Am. J. Trop. Med. 28: 373, 1948.

6. Snorf, L. D.; Foltz, E. E., and Howard, B.: A Postwar Survey of Amebiasis and Other Intestinal Parasites, Gastroenterology 9: 539, 1947.

7. Wright, W. H.: The Public Health Status of Amebiasis in the United States as Revealed by Available Statistics, Am. J. Trop. Med. 30: 123, 1950.

This has caused speculation as to whether or not this represents mild hepatic amebiasis. Sodeman⁸ and D'Antoni⁹ have noted liver tenderness and enlargement in individuals with colonic amebiasis which clear up on treatment with drugs which attack only intestinal amebiasis, such as one of the iodine preparations, which are known not to directly affect amebiasis of the liver. Sodeman⁸ suggests that these findings may represent beginning liver involvement. Dennis¹⁰ has noted that "histological sections of most ulcers show that amebae are frequently present in the small blood vessels of the colon, and some degree of secondary involvement of the liver is common." Amebiasis may affect the lungs, kidneys, brain, or other organs, and the symptoms are referable to the affected organ.

There are, also, many persons with no apparent symptoms in whose stools *E. histolytica* are found. However, Towse et al. found that, upon careful questioning and thorough examination, manifestations compatible with the infection were found in 85% of their group of so-called "healthy carriers."

In view of the wide variation in the clinical picture of this disease, clinical diagnosis is not at all accurate. The complement fixation test for amebiasis gives varying results by different workers,^{9, 11, 12} and the procedure is not practical for use in small laboratories. Microscopic examination of the stool is the most reliable method of diagnosis, but requires laboratory technicians well trained in parasitology. In our laboratory, stool specimens are examined by direct saline smear, with D'Antoni's iodine cyst stain, and by the zinc sulfate flotation method.¹ If no parasites are found in two or three normally passed specimens, the patient is prepared for sigmoidoscopy with a saline purgative and physiologic saline ene-

mas. A purgative stool, an enema specimen, and a specimen obtained by aspiration of the bowel wall at sigmoidoscopy are examined. This method has been described by D'Antoni.¹³ The proctoscopic specimen is by far the most valuable one. It is obtained by using a glass tube with a rubber bulb. This specimen, in our experience, is much superior to those obtained by a cotton swab.

Though there is some disagreement as to the existence of a carrier state in amebiasis, most authorities^{1, 3, 9, 14, 15, 16, 17} believe that all cases with *E. histolytica* should be treated. There are many drugs which are presently being used in the treatment of amebiasis. The oxyquinoline derivatives (vioform, chiniofon and diodoquin) and carbarsone are believed by some workers^{9, 15} to be less effective than they were once thought to be. Bargaen,¹⁶ however, recently reported very satisfactory results with a combination of emetine hydrochloride with carbarsone or aldarson and diodoquin. Our results with diodoquin and carbarsone have not been very satisfying, and we have seen several cases of dermatitis due to the latter drug. Gutch¹⁴ has recently reported additional evidence of the toxicity of emetine which makes one hesitate to use this drug routinely, especially since the very encouraging reports of the use of chloroquine in extra-intestinal amebiasis. Using chloroquine, Conan^{18, 19} has reported excellent results in the treatment of hepatic amebiasis, and noted clearing of amebas in the stools in 54% of cases with intestinal amebiasis. He has presented evidence showing the low toxicity of this drug. Browne¹⁷ also reports good results in amebic hepatitis with chloroquine. In view of the presumed frequency of mild hepatic involvement, Conan¹⁸ and

8. Sodeman, W. A.: Clinical Picture of Hepatic Amebiasis, *Am. J. Trop. Med.* 30: 141, 1950.

9. D'Antoni, J. S.: Ch. 54 in Pullen, R. L., Communicable Diseases, Lea and Febiger, Philadelphia, 1950.

10. Dennis, E. W.: Discussion, *Am. J. Trop. Med.* 30: 159, 1950.

11. Hussey, K. L., and Brown, H. W.: The Complement Fixation Test for Hepatic Amebiasis, *Am. J. Trop. Med.* 30: 147, 1950.

12. Bozicevich, John: Discussion, *Am. J. Trop. Med.* 30: 154, 1950.

13. D'Antoni, J. S.: Bacillary Dysentery, with Special Reference to the Chronic Form (*Shigella Colitis*), *Clinics* 2: 936, 1943.

14. Amebiasis (editorial), *J. A. M. A.* 142: 343, 1950.

15. Gutch, C. F.: The Treatment of Amebiasis, with a Preliminary Report on the Use of Aureomycin, *Ann. Int. Med.* 33: 1407, 1950.

16. Bargaen, Arnold: Present Day Management of Amebiasis, *J. A. M. A.* 145: 785, 1951.

17. Browne, D. C.: Discussion of Paper by Bargaen, Arnold, Present Day Management of Amebiasis, *J. A. M. A.* 145: 785, 1951.

18. Conan, N. J., Jr.: Chloroquine in Amebiasis, *Am. J. Trop. Med.* 28: 107, 1948.

Dennis¹⁰ have recommended the routine use of chloroquine combined with one of the slowly absorbed drugs primarily effective in intestinal amebiasis.

Milibis is a relatively new drug containing bismuth and arsenic which has been found to be effective in intestinal amebiasis. Berberian and his co-workers²⁰ have reported that 92.6% of 67 patients were cleared of their amebas after treatment with milibis. These cases were followed for an average of 320 days, and with an average of 10.9 post-treatment examinations. These authors give evidence of the low toxicity of this drug. It is very poorly absorbed and is effective only in intestinal amebiasis. D'Antoni¹⁹ has used milibis, combined with chloroquine, with fair results. Our results with milibis alone, and combined with chloroquine, have been more impressive than treatment with the older drugs, but we have had many recurrences. However, we have seen no rash or other serious side effects with milibis as occurs with carbarsone.

Recently, there has been much in the literature of the excellent results obtained in the treatment of amebiasis with some of the newer antibiotics. Great hope is being held for these drugs because it is believed that they are effective against both intestinal and extra-intestinal amebiasis. Of these drugs, aureomycin has had the most extensive trial. McVay, Laird, and Sprunt,^{21, 22} Gutch,¹⁴ Hughes,²³ Most, et al.²⁴ have reported good results in a high percentage of cases with very few relapses. Armstrong and his associates²⁵ have used aureomycin

in cases of amebic dysentery with proctoscopic evidence of ulceration. Ninety four per cent of these cases were classified as cures at the end of 27 days. The relapse rate of the patients who returned for follow-up examination was high, and the authors suggested that if one of the older drugs, such as diodoquin, is combined with aureomycin the relapse rate may be lowered.

Most and his associates^{24, 26} treated 51 patients with bacitracin and obtained clearing of parasites in all but three cases. However, about one-third of the cases relapsed. Chloromycetin was found by these workers to be ineffective in 6 cases. Using terramycin, Most²⁷ has obtained clearance of amebas from the stool in 15 of 16 cases.

Our experience with the use of these newer antibiotics in amebiasis has been limited, but we have used terramycin in doses of 2 gm. daily for ten days in 19 cases. Ten of these have reported for follow-up examination one month after treatment, and one proved relapse has occurred. Symptoms have recurred in three other patients whose stools have remained negative. Several of these patients lost their amebas after having failed to respond to other forms of treatment. These results are considered to be encouraging, but, of course, too little time has elapsed following therapy to evaluate the results fully. A distressing diarrhea has followed the use of terramycin in about 25% of our cases. We have treated 3 resistant cases with 80,000 units of bacitracin daily for 10 days. All three of those cases had amebas in their stools one month after treatment.

In evaluating the results with any form of treatment, as Sodeman²⁸ has recently emphasized, it must be remembered that if approximately 10% of all individuals in the United States are considered to have amebiasis, 10% of persons with peptic ulcers and other disease presenting gastro-intestinal symptoms are included. Symptoms may, therefore, represent disease other than amebiasis. It follows that relapses can be

19. Ibid. The Treatment of Hepatic Amebiasis with Chloroquine, *Am. J. Med.* 4: 309, 1949.

20. Berberian, D. A.; Dennis, E. W., and Pipkin, C. A.: The Effectiveness of Bismuthoxy p- N-Glycolylarsanilate (Milibis) in the Treatment of Intestinal Amebiasis, *Am. J. Trop. Med.* 30: 613, 1950.

21. McVay, L. V.; Laird, R. L., and Sprunt, D. H.: A Preliminary Report of the Successful Treatment of Amebiasis with Aureomycin, *Science* 109: 590, 1949.

22. Ibid. Treatment of Amebiasis with Aureomycin, *South. M. J.* 43: 308, 1950.

23. Hughes, J. D.: Treatment of Amebiasis with Aureomycin, *J. A. M. A.* 142: 1052, 1950.

24. Most, H.; Miller, J. W., and Grossman, E. J.: Treatment of Amebiasis with Bacitracin and Other Antibiotics, *Am. J. Trop. Med.* 30: 491, 1950.

25. Armstrong, T. G.; Wilmot, A. J., and Elsdon-Dew, R.: Aureomycin and Amoebic Dysentery, *Lancet* 2: 10, 1950.

26. Most, H.; Miller, J. W.; Grossman, E. B., and Conan, N. J., Jr.: Treatment of Amebiasis with Bacitracin, *J. A. M. A.* 143: 792, 1950.

27. Most, H.: quoted by Borgen, Arnold, *Present Day Management of Amebiasis*, *J. A. M. A.* 145: 785, 1951.

28. Sodeman, W. A.: General Discussion on Amebiasis Panel, *Am. J. Trop. Med.* 30: 165, 1950.

proved only by the recurrence of amebas in the stools.

In conclusion, it would appear that amebiasis in its subacute form is a very common disease. Its diagnosis is dependent up-

on the suspicion of the clinician and the ability of his laboratory technician.

Much progress is being made in the treatment of amebiasis but our present methods are not entirely satisfactory.

TRENDS AND TREATMENT IN EAR, NOSE, AND THROAT ALLERGY

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Until approximately thirty years ago trained observers made a distinction between catarrhal and suppurative diseases of the nose and paranasal sinuses. Conditions which we presently regard as allergic were then classified as catarrhal. Bosworth,¹ in a text published in 1896, devoted approximately one hundred pages to a discussion of catarrhal diseases but used only twenty five pages to describe purulent diseases of the paranasal sinuses. At that time, x-ray was not available. Observance of eosinophile predominance in nasal secretions had been published about a decade prior to this time by various German writers.

French Hansel and associates have probably brought our attention to the significance of eosinophiles in nasal and sinus secretions more impressively than have others. Before their reports, emphasis had been usually made upon bone changes. Today, it is generally accepted that more reliable information may be gained from microscopic study of secretions, body fluids, and soft tissues, and that predominance of eosinophiles is practically diagnostic of allergic disease.

DIAGNOSIS

Diagnosis must depend upon careful history and inventory of symptoms, grossly visible pathologic changes, microscopic study of secretions, body fluids, and soft tissues; roentgenographic examinations, diagnostic tests, including skin tests; deliberate exposure to inhalants; withholding, followed by deliberate ingestion of foods, drugs and beverages; and sometimes thera-

peutic trial of clinically indicated immunization injections.

X-RAY

X-ray studies must be correlated with the condition of the patient when the films were exposed. Proetz,² in 1926, reported that in acute reactions involving the antrum, positive x-ray findings may completely disappear in 24 to 48 hours; just as an urticarial wheal disappears from the skin. So, allergic edema of the sinus membranes may be quickly reversible under allergic management.

COMMON MANIFESTATIONS

Common otolaryngologic manifestations of allergy have been briefly enumerated by Hansel³ as follows: (1) the respiratory tract—nose, paranasal sinuses, adenoids and tonsils, nasopharynx, larynx, trachea and bronchi; (2) the mouth—oral mucosa, gums, lips, tongue, soft palate, and salivary glands; and (3) the ear—auricle, canal, tympanum, middle ear, eustachian tube, labyrinth, and cochlea.

It must be remembered that otolaryngologic manifestations of allergy are but localized evidence of a systemic disorder, and the patients often exhibit evidence of gastro-intestinal, urogenital, and skin allergy, as well as headache, weakness, fatigue, myalgia, arthralgia, mental confusion, depression, ataxia, muscle incoordination, amnesia,

Read before the Association in annual session, Mobile, April 19, 1951.

1. Bosworth, Francke H.: *Diseases of the Nose and Throat*, New York: William Wood and Co., 1896.

2. Proetz, A. W.: *Displacement Irrigation of Nasal Sinuses. A New Procedure in Diagnosis and Conservative Treatment*, Tr. Washington U. Med. Soc. (Dec.) 1925, and J. Missouri M. A. 23: 229, 1926.

3. Hansel, French K.: *Allergy in Otolaryngology: Historical Review*, Supplement to Transactions, Am. Acad. Ophth. and Otolaryng., (Feb.) 1951.

disorientation, and, sometimes, actual psychotic behaviour.^{4, 5}

CAUSATIVE FACTORS

The causative factors involved in the allergic reaction are divided as follows: (1) inhalants—dusts, moulds, smuts, smokes, fumes, pollens, animal emanations, cosmetics, cooking odors; (2) ingestants—foods, drugs, beverages; (3) Contactants—which includes any substance that makes contact with the body, such as wool, nylon, rayon, drugs, dusts, pollens, greases, soaps, polishes, waxes, paints; (4) physical agents—sunshine, cold, heat, atmospheric pressure; and (5) probably bacterial—metabolic end products of infection, toxins, etc.

Clinical judgment will occasionally outweigh the results from skin tests and other diagnostic procedures. An occasional patient will experience violent allergic reaction to ingestion of specific foods and, yet, will exhibit negative skin tests from that food. Similar responses have been observed in reactions to drugs, serums, and injections. Randolph⁶ has emphasized that skin tests for foods, as previously reported by Rowe,⁷ Cocoa,⁸ Rinkel,⁹ and others, are unfortunately not reliable. He also states that inasmuch as both positive and negative skin tests must be confirmed or disputed by ingestion techniques, he considers skin tests for foods as practically worthless, and has abandoned their use. This has been our experience also. It is generally agreed by otolaryngologic allergy students that skin tests for inhalants are highly reliable, and that skin tests for foods are somewhere between 20% and 40% reliable.

MASKED REACTIONS

Rinkel¹⁰ reports that if a patient eats a food (which is capable of causing an allergic reaction) once in 72 hours, the symptoms will often be mild, chronic, often not acknowledged by the patient, and will not appear in time relation to the ingestion of that food. He calls this "masked allergy." He also states that if this food be entirely omitted for four days and nights the allergy will often become "unmasked"; and if the patient then takes that food at noon on the fifth day, there will usually be a flare-like reaction with symptoms sometimes very severe, even sufficient to cause physical collapse occasionally. In this report, he states that in a series of 376 patients who were symptom-free at the time they were fed foods which had been completely avoided for four days, 84% developed symptoms within 28 minutes after eating the food. Also the earliest reactions occurred in three minutes; in 27 patients the reactions occurred in ten minutes; while the latest occurrence of symptoms took place 13 hours after ingestion. He then emphasizes that any patient who is receiving adequate therapy for inhalants and who continues to have symptoms should be suspected of having food allergy. During the past two months, we have partially confirmed his reports in the management of several patients who were partially relieved from our treatment, and who were reasonably happy about the situation, but about whom we were unhappy because we could not account for the mild chronic symptoms which persisted. When we unmasked their symptoms by having them omit entirely such a common food as wheat for four days, and then administered that food at noon on the fifth day, violent and quick reactions were observed. Subsequent avoidance of that food resulted in more complete relief from symptoms. The most commonly proven guilty foods are milk, egg, wheat, corn, lettuce, chocolate, nuts, and fish. It is imperative that printed lists naming where the foods are found be furnished the patient, otherwise there will be accidental ingestion of the trial food during the four-day omission, and the symptoms will remain masked instead of becoming unmasked.

4. Randolph, Theron G.: Allergic Factors in the Etiology of Certain Mental Symptoms, *J. Lab. and Clin. Med.* 36: 977 (Dec.) 1950.

5. Rinkel, H. J.; Randolph, T. G., and Zell, M.: Food Allergy, Springfield, Ill.: Chas. C. Thomas, 1951.

6. Randolph, Theron G.: The Diagnosis of Food Allergy, Supplement to Transactions, *Am. Acad. Ophth. and Otolaryng.*, (Feb.) 1951.

7. Rowe, Albert H.: An Evaluation of Skin Reactions in Food Sensitive Patients, *J. Allergy* 5: 135-147 (Jan.) 1934.

8. Cocoa, A. F.: Familial Nonreagenic Food Allergy, Springfield, Ill.: Chas. C. Thomas, 1942.

9. Rinkel, Herbert J.: Food Allergy, *J. Kansas M. Soc.* 37: 177-184 (Jan.) 1934.

10. Rinkel, Herbert J.: The Management of Food Allergy, Supplement to Transactions, *Am. Acad. Ophth. and Otolaryng.*, (Feb.) 1951.

IMMUNIZATION INJECTIONS

We strongly endorse the small or low optimum dosage type of immunization injections advocated by the group making up the American Society of Ophthalmologic and Otorlaryngologic Allergy. Results obtained by such methods have been numerously reported by Hansel, Black, Shambaugh, Ashley, McGannon, Kuhn, Hampsey, Stitt, Clements, and others. The small dosage injections are safe in the hands of any physician or graduate nurse and do not cause severe systemic reactions as are so often observed from the use of increasingly larger doses.

Mention must be made of the help in management of allergy patients, especially early in their treatment, from the use of drugs such as antihistamine, ephedrine and ephedrine-like substances, epinephrine, and aminophylline. These drugs are very helpful and we desire to wean the patient from their use gradually, as the symptoms respond to immunization injections, and avoidance of causative substances. This may not be considered sound practice by some but I am certain that most conscientious otolaryngologic allergy students will privately admit that they use these drugs.

SOME RECENT STUDIES ON VIRAL ENCEPHALITIDES

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The infectious agents known as the viruses are an extremely heterogenous group characterized by small size and strict dependence on actively metabolizing cells for their multiplication. Our knowledge of virus diseases and of the infectious agents causing them is so limited that it is essential that we avoid the tempting tendency to describe the fundamental characteristics of this heterogenous group of infectious agents on the basis of limited observations on a small and highly selected number of them.

The viruses are successful parasites and to be so they must be able to adapt well to their natural host. This they have done and, with few exceptions, they retain the ability to adapt themselves to other hosts. This is the first fundamental fact that the investigator recognizes and uses in studying a virus, especially those viruses which attack man. He attempts to isolate and adapt the virus to a satisfactory laboratory animal and in so doing he induces changes in the virus, the nature and extent of which he understands poorly, if at all. He manages to develop a strain of virus which possesses antigens common to the parent virus, but he changes many of its other properties, such as infectivity, virulence, host range, tissue tropisms, etc. He assumes, however,

that he is working with the same agent as was originally present in the naturally occurring infection. He would scoff at the idea, however, that Freidlander's bacillus and the pneumococcus were the same merely because they had an easily recognizable common antigen.

Beginning with the development by Pasteur of the fixed rabies virus in rabbits from the canine street virus, to the present day, the great bulk of experimental data on virus diseases of man and animals has been collected using laboratory strains of viruses adapted to some host other than the natural one. One should therefore exercise caution in interpreting or accepting the interpretation of others of data collected on laboratory adapted strains of viruses in relation to what probably does or may occur in the naturally occurring infections in man. It is tempting but dangerous to conclude that because a given virus acts in a certain observed manner in an experimental animal it acts in a similar way in man.

In addition to these variations so commonly induced in the experimental laboratory, viruses are known to mutate spontaneously. In some, such as human influenza virus¹

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1. a. Burnet, F. M., and Bull, D. R.: Australian J. Exper. Biol. & M. Sc. 21: 55-69, 1943.

b. Burnet, F. M., and Stone, J. D.: Australian J. Exper. Biol. & M. Sc. 23: 151-160, 1945.

and some of the bacteriophages,² the rate of spontaneously occurring discontinuous mutation is well known and it is not unreasonable to assume that further study will reveal similar mutations in many if not all viruses.

The recognition of these spontaneously occurring mutations and induced variations among the viruses is of the greatest importance to our understanding of all naturally occurring virus infections, and especially the so-called epidemic viral encephalitides of man.

As pointed out before, the viruses are highly evolved parasites, living in close association with their host and, in fact, requiring actively metabolizing cells for their reproduction. This close association and extreme dependence on the host indicates a long period of successful parasitism, and a long period of successful parasitism indicates that, in the natural host, a given virus does little if any damage to the host. It is this fact which is often overlooked in attempting to understand epidemic virus infections in man. Research in the past few years has indicated that, with the possible exception of poliomyelitis, the clinical manifestation of central nervous system (CNS) infections with viruses is due to viruses in which man is not the primary host. For example, small rodents, especially mice, are the natural hosts for the virus of lymphocytic choriomeningitis, and large numbers of wild mice have completely silent infections.³ The virus is so well adapted to this natural host that infected females pass the infection to the young in utero, the entire transmission cycle being clinically inapparent in both mother and young.³

The group of so-called arthropod-borne virus encephalitides, some of which assume epidemic proportions in man, are probably all naturally occurring, widespread, silent infections in wild and domestic birds and

mammals and in most cases give no indication of infection of the C. N. S. in the natural host.⁴ In this group are the various equine encephalomyelitis viruses, so-called because they were first recognized as clinical entities in horses, although it is possible human infections occurred prior to the recognition of the disease in horses. Also included in the group are the epidemic viral encephalitides of man—St. Louis encephalitis, Japanese encephalitis, and Russian Far-East spring-summer encephalitis, so named because of the geographical regions in which human infections were first recognized, although the distribution of these viruses is now known to be very much greater than the names would indicate. At least some of the natural hosts of these viruses are known to be wild and domestic birds, and the transmission cycle of the virus in them is carried out by their natural ectoparasites.⁵ Some of the known ectoparasite vectors give evidence of having had a long association with the virus and the natural host since they have been shown to transfer the virus by transovarian passage to their young.⁶

On the basis of serum neutralization tests it is apparent that the virus of St. Louis encephalitis is widely distributed in the world. Such serologic evidence of unrecognized past infection in man has been reported from Africa and some Pacific islands in addition to a wide distribution in this country outside of areas where clinically recognizable infections have occurred.⁵ A similar situation exists for Japanese encephalitis⁵ as well as some of the members of the equine encephalomyelitis group.⁷

It appears now that there exists a group of viruses, widely distributed, perhaps even world-wide in distribution, which are well adapted to a close association with their natural host or hosts, and which are able to infect man, often giving no evidence of infection except readily detectable and highly specific humoral antibodies. Neutralizing antibodies in man to members of this group of so-called epidemic viral encephalitides

2. Rivers, T. M.: *Viral and Rickettsial Infections of Man*, Philadelphia: J. B. Lippincott Co., 1948, pp. 156-158.

3. Traub, E.: *Science* 81: 298-299, 1935.

4. a. Hammon, W. McD., and Reeves, W. C.: *J. Exper. Med.* 83: 163-173, 1946.

b. Hammon, W. McD.; Reeves, W. C., and Izumi, E. M.: *J. Exper. Med.* 83: 175-183, 1946.

c. Hammon, W. McD.; Reeves, W. C., and Burroughs, R.: *Proc. Soc. Exper. Biol. and Med.* 61: 304-308, 1946.

5. Hammon, W. McD.: *Am. J. Trop. Med.* 28: 515-525, 1948.

6. Smith, M.; Blattner, R. J., and Heys, F. M.: *J. Exper. Med.* 86: 229-237, 1947.

7. Mace, D. L.; Ott, R. L., and Cortez, F. S.: *Bull. U. S. Army M. Dept.* 9: 504-507, 1949.

have been found in widely separated areas in the world in which the clinically recognized disease has not been reported as well as from individuals in endemic areas who give no history of having had a clinically recognized infection. Occasionally they occur in man in epidemic form with manifestations of severe C. N. S. involvement. It is from viruses isolated from such cases of clinically manifested C. N. S. involvement and then selectively adapted to the C. N. S. of laboratory animals that we have formed our concept of a marked affinity of these viruses for the cells of the C. N. S. and have designated them as neurotropic viruses. This concept of marked and strict tissue tropisms is firmly rooted in textbook and formal teaching treatment of virology.

Recent investigations have indicated that the so-called neurotropic viruses of this group do not have a strict dependence on cells of the C. N. S. for multiplication as previously believed. For example, strains of St. Louis encephalitis virus induced by laboratory manipulation to acquire a very high degree of infectivity for selected laboratory animals when inoculated directly into the C. N. S. do not cause symptoms attributable to C. N. S. involvement when inoculated subcutaneously into natural hosts such as wild or domestic birds,^{4, 5} although a massive viremia does result. Even in selected laboratory animals which develop massive and rapidly fatal C. N. S. infections following inoculation of these laboratory induced neurotropic strains of virus, various non-nervous tissues such as blood, lymph nodes, various levels of the intestinal tract, and striated muscle contain virus in high concentration; in some cases, even as much virus as in the C. N. S. itself.⁸ Thus it appears that at least some of the so-called neurotropic viruses are not strict in their tissue tropisms, even after hundreds of passages in a specific type of tissue.

Poliomyelitis is an example of a virus disease in which man is probably the natural host as evidenced by the facts that no other animals have been found infected in nature, adaptation of the virus to lower animals is accomplished only with difficulty, and the

very high incidence of subclinical infections in man, particularly in areas where the risk of exposure is great. The clinical manifestations of this infection in man are primarily those of C. N. S. involvement. Recent epidemiologic studies have shown that the incidence of clinically apparent infection in man with this virus is very small in relation to subclinical infections, occurring even in endemic and epidemic areas only about one time for each hundred to several hundred subclinical infections.⁹ Data to dispute the concept of strict neurotropism of this virus have also been recently presented. For example, most human infections show no evidence clinically of C. N. S. involvement, but they appear to excrete as much virus in the stools as does the clinically recognized case¹⁰ and develop similar humoral antibody levels to the virus.⁹ The extent of the C. N. S. involvement in such subclinical cases in man is not known but the fact that some of the higher primates, such as the chimpanzee, have been reported to become infected after feeding on the virus, as evidenced by prolonged excretion of the virus in the stools and the appearance of humoral antibody in the absence of any clinical or histologic evidence of C. N. S.¹¹ involvement, indicates that a similar thing may occur in man.

Regarding the strict neurotropism of the virus of poliomyelitis, it should be pointed out that recent work has indicated that strains of poliomyelitis virus from man, adapted to the C. N. S. by appropriate laboratory manipulation, are able to multiply in tissue cultures in a variety of tissues, such as embryonic human striated muscle and intestine and human foreskin from 4 to 11 year old individuals.¹² The multiplication of such strains of poliomyelitis virus, previously selected for their ability to multiply in and damage the cells of the C. N. S., in tis-

9. Casey, A. E.; Fishbein, W. I.; Schabel, F. M., Jr., and Smith, H. T.: *Am. J. Pub. Health* 40: 1241-1250, 1950.

10. Schabel, F. M., Jr.; Smith, H. T.; Fishbein, W. I., and Casey, A. E.: *J. Infect. Dis.* 86: 214-218, 1950.

11. Howe, H. A.; Bodian, D., and Morgan, I. M.: *Am. J. Hyg.* 51: 85-108, 1950.

12. a. Enders, J. F.; Weller, T. H., and Robbins, F. C.: *Science* 109: 85-87, 1949.

b. Weller, T. H.; Robbins, F. C., and Enders, J. F.: *Proc. Soc. Exper. Biol. and Med.* 72: 153-155, 1949.

8. a. Peck, J. L., and Sabin, A. B.: *J. Exper. Med.* 85: 647-662, 1947.

b. Schabel, F. M., Jr.: *J. Infect. Dis.* 88: 32-49, 1951.

sues made up of peripheral nerve processes and cells of non-nervous origin indicates that the strict neurotropism of this virus is something less than generally believed.

Thus it appears that the viruses causing the group of infections known as the epidemic viral encephalitides in man are usually clinically silent in their natural hosts, and in those in which man is not the natural host, many, if not most of the human infections, are also clinically inapparent. The viruses themselves, generally considered to have a marked tropism for tissues of the C. N. S. on the basis of their activity in clinically recognized infections or on the basis of the ability of laboratory selected strains to damage the C. N. S. of experimental animals, probably multiply in most naturally occurring infections in tissues other than the C. N. S. Even strains selected for tropism to C. N. S. tissues retain marked ability to multiply in non-nervous tissues.

Why these viruses occasionally are able to multiply in and cause some damage in the C. N. S. of infected individuals is not known, but the ease with which biologic variation can be induced, coupled with the probability of spontaneously occurring mutations, suggests one possible explanation. An occasional spontaneously occurring mutant or a variant induced by some unknown factor may account for the occasional outbreak of clinically recognized cases. It has recently been reported that the virus of poliomyelitis isolated from the stools of individuals not suspected of having poliomyelitis (the naturally occurring infection in the natural host) is much less infectious for monkeys in the experimental laboratory, being adapted to the C. N. S. of monkeys only with great difficulty.¹³ The virus isolated from clinically recognized cases, on the other hand, usually can be adapted to monkeys much more readily, suggesting some biologic difference between virus from the two different types of human infection. Typical clinical cases of influenza in swine occur only in the presence of infection with both the swine influenza virus and *Hemophilus influenzae suis*. Some similar mixed infections may be acting in clinically recognized infections of viral encephalitides of man.

SUMMARY

Present evidence indicates that the virus diseases known as the epidemic viral encephalitides of man, with the exception of poliomyelitis, are primarily natural infections of lower animals which are usually clinically silent in these natural hosts. When these viruses infect their natural hosts, they seldom cause C. N. S. damage and, in fact, seem to have little affinity for nerve tissue.

Why these viruses sometimes attack the C. N. S. of man is not known, but spontaneous mutation or variation induced in some unknown manner may produce an altered virus capable of invading and damaging the C. N. S. of man.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case presented by

Amos C. Gipson, M. D.

J. S. Bobo, M. D.

This 19 month old male child was doing well until one week before admission when he developed abdominal pain, fever and constipation. The abdominal pain and fever had been present intermittently since the onset. He vomited 2 or 3 times at the beginning of the illness.

Past History: About two months previous to this illness he passed some blood in the stools for twenty-four hours, then it cleared up. One week later he had a massive intestinal hemorrhage and was admitted to an Army hospital in Massachusetts but a definite diagnosis was not made.

Physical examination at the time of admission revealed rigidity, tenderness and a mass in the area of the umbilicus and the right lower quadrant of the abdomen. A rectal examination revealed tenderness in the right lower quadrant.

The blood study showed hemoglobin of 7 grams (45%), a red cell count of 4,480,000, and a white count of 26,000, with 58% polymorphonuclear leucocytes and 37% lymphocytes.

After giving the child 200 cc. of citrated blood intravenously a laparotomy was performed by one of us (J. S. B.) and a Meckel's diverticulum full of pus was found. The

13. Sabin, A. B., and Steigman, A. J.: Am. J. Hyg. 49: 176-193, 1949.

diverticulum was removed and the child made a prompt and complete recovery.

Meckel's diverticulum is said to occur in 2 to 3% of all individuals coming to autopsy examination. This out-pocketing from the ileum does not often give rise to important pathology, but when it does so the resulting lesion may be a serious one.

During early embryonic life the intestine has a wide anterior communication with the yolk sac. This opening is gradually narrowed to form the tube-like vitello-intestinal duct. The yolk sac remains within the cord and the vitelline duct becomes reduced to the long slender yolk stalk which then loses its connection with the intestine at about the 7 mm. stage.

Meckel's diverticulum represents that portion of the vitelline duct which had opened into the ileum. This small pouch is usually disconnected from the umbilicus but a cord of tissue, the remnant of the primitive yolk stalk, may join the terminal ileum to the inner aspect of the umbilicus. If a longer portion of the vitelline duct remains patent, the intestine may attain an external opening at the navel.

Meckel's diverticulum arises from the ileum 18 inches to 3 feet above the ileocecal valve. It opens on the antimesenteric side of the intestine, but may curve around and lie against the side of the gut to which it becomes adherent.

The diverticulum is a finger-like out-pocketing which, usually, has a diameter somewhat less than that of the adjacent bowel and a length varying from $\frac{1}{2}$ inch up to 2 or 3 inches.

The lining of a Meckel's diverticulum does not necessarily correspond to that of the ileum to which it is attached. Most often it is gastric and ileal mucosa or ileal only.

Important pathologic complications may arise from a Meckel's diverticulum in many ways. It is usually removed because of the following complications in order of frequency:

1. Hemorrhage.
2. Leading point of intussusception.
3. Abdominal pain.
4. Inflammation, with or without perforation.

5. Obstruction from band (to umbilicus).
6. Umbilical fistula.

Hemorrhage is the most common complication and almost invariably arises from a small peptic ulcer at the neck of the pouch or in the nearby intestine, which is presumably due to local digestion of the mucous membrane by the action of hydrochloric acid and pepsin which are secreted from aberrant gastric mucosa lining the diverticulum.

The possibility of a Meckel's diverticulum should always be considered in any infant having grossly bloody stools for which some other definite cause cannot be found and an exploratory laparotomy should always be done, as this is the only way by which the diagnosis can be made.

Varicose Veins—Before definitive treatment for varicose veins is done, the complications must be controlled, which implies the elimination of infection, dermatitis, and, if possible, the cure of ulceration. The complications can be controlled by suitable antibiotic drugs and supporting dressings such as Unna paste boots, elasto-plast boots, elastic bandages, and elastic stockings. As a rule, the bland local applications are preferable. For the eczema, 3 per cent ichthyol in zinc oxide is efficacious. In some instances bed rest is necessary to prepare the patient for surgery.

Definitive treatment is aimed at the elimination of the varicosities. Ligations, excision of the veins, injections of sclerosing solutions, or various combinations of these methods have been used almost universally.

Elimination of varicose veins improves the circulation of the extremity. It is my contention that a dilated, incompetent superficial vein does not aid in returning blood to the heart even though the deep venous trunks are blocked. The fact that the blood flows in the wrong direction in the incompetent superficial vein can be easily demonstrated. A segment of vein is emptied by pressure and held with the examining fingers. If the distal finger is raised, the vein will fill very slowly. If the vein is again emptied and the proximal finger raised, the reverse flow will rapidly fill the segment of vein. For these reasons, I believe that the dilated varicose veins should be eliminated even though there is evidence of deep venous involvement.

Simple ligation was so commonly associated with recurrence that the need for something further was obvious. Local injections likewise were followed by recurrence in a high percentage of cases. The retrograde injection at the time of ligation has been so frequently associated with serious complications that I am of the opinion it should not be done. There have been

several case reports of vascular spasm after retrograde injection which were so severe and refractive to treatment that amputation was necessary.—*Hartman, Texas State J. Med., September '51.*

Surgery in Diabetes—Because of more complete understanding of the pathologic physiology in diabetics, together with more adequate appreciation of the metabolic processes involved, fluid and electrolyte economy, and the rectification of aberrances by proper application of dietary principles and the use of insulin, there no longer remains any contraindication to do indicated incidental surgery in a diabetic any more than in a nondiabetic. In previous years, procrastination and even total avoidance of elective surgical procedures were perhaps more justified, but with the current advances in medical therapy in diabetics such procrastination merely defers elective procedures until such time as the patient is in an older age group, and, consequently, usually a poorer surgical risk. Prior to undertaking any surgical procedure on a diabetic, it is, of course, mandatory to obtain a good preoperative evaluation of cardiac, renal, pulmonary, and diabetic status. In addition, it is advisable to forego surgery until such time as any imbalances have been stabilized and any aberrances have been rectified when possible.

Conditions resulting from skin infections and conditions resulting from arterial insufficiency of the lower extremities constitute the principal surgical complications of diabetes.

With the advent of antibiotics, principally penicillin, the complications of skin infections can now be more safely approached with added surgical conservatism; whereas, prior to the advent of effective antibiotics and chemotherapeutic agents, early radical excision of large carbuncles was necessary in order to control the infection and the diabetes present concomitantly. The current trend has been toward early massive doses of penicillin, permitting the infection to become localized prior to excision and drainage with minimal final tissue loss. During the acute phase of such an infection, it is, of course, still necessary to observe carefully for any change in the status of the activity of the preexisting diabetes as reflected by change in insulin requirement. Acidosis should be anticipated in diabetics who are initially seen with a rather acute skin infection or complication thereof. It is usually prudent in the treatment of these patients, who are generally diabetically unstable because of the infection present, to utilize regular insulin during the period of correction of any acidosis as an emergency procedure and through the time when necessary surgery is performed, continuing until the infection has become stabilized.

Probably the most important therapy of arterial insufficiency of the lower extremities is of a

prophylactic nature. As soon as the diagnosis of diabetes mellitus is made in any patient, that patient should be thoroughly instructed regarding the potential danger to his feet, and even to his life, that can result from neglect. Throughout his diabetic life the patient should be constantly vigilant. He should look upon any foot infection with downright alarm. Epidermophytosis should be treated promptly and should be given prompt attention. Careful cutting of the nails, especially of the great toe, should be done in such a fashion as to prevent ingrown toenails. Shoes should always be carefully fitted so as to avoid cramping of the toes as well as the production of blisters or other skin changes due to local pressure. The use of external heat in the form of hot water bottles and electric pads is extremely dangerous. This is especially true in the diabetic who has nerve involvement with impaired sensory perception. Vasoconstricting influences, such as exposure to excessive cold, smoking, and extremes of fatigue, should be avoided at all times. Adequate protection of the feet from excess cold can usually be accomplished by the use of woolen socks. At the first manifestation of ischemia the diabetic should sleep with woolen socks. The diabetic should frequently and carefully clean his feet. The use of a drying bland foot powder will help prevent the accumulation of moisture to some degree. At the onset of any skin discoloration of the toes, the diabetic should immediately notify his physician who, in turn, should advise that walking should not be allowed until such time as whatever vascular complications present have been safely dealt with.

In the event that gangrenous changes are present the diabetic of today has a much better chance of early rehabilitation with a useful lower extremity than had the diabetic of as recently as ten years ago. This is attributable, in a large measure, to advances made in the study of the pathologic physiology of diabetics, nutrition, antibiotic and chemotherapeutic agents, and advances in studies of the physiology of peripheral circulation.

In cases in which there is good demarcation and no infection present, with gangrene involving one or more toes, it is not infrequently possible to produce a satisfactory transmetatarsal amputation as described by McKittrick. Such an amputation, when successful, results in a useful foot. Transmetatarsal amputation should not be attempted unless the ischemic process is stable and an adequate circulation is felt to be present in the foot. Various criteria have been proposed for the evaluation of foot circulation. Smithwick proposes that such amputations be reserved for individuals in whom flushing is noted in the whole foot, twenty seconds or less after the foot, which has been previously elevated for five minutes, is placed in a dependent position.—*Sabatier, New Orleans M. & S. J., September 1951.*

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DYSPNEA AND WHEEZING

"The chief causes of dyspnea are:

A. General:

(1) Exertional. This type of dyspnea occurs in normal persons, varying with the amount of exertion and the altitude at which the exertion takes place. Ordinarily, it is not particularly distressing.

(2) Anemia. As the hemoglobin content of the blood falls, dyspnea may develop on slight exertion which would not normally produce it.

(3) Chemical. If the carbon dioxide level in the blood rises and the pH value falls, the respiratory center is stimulated and dyspnea, the "air hunger" of Kussmaul, occurs.

(4) Hyperventilation syndrome. This is a purely neurotic phenomenon, but it produces real dyspnea which may result in acapnia and even syncope with tetany.

B. Pleuropulmonary:

(1) Extensive destruction, consolidation or fibrosis of the pulmonary parenchyma.

(2) Obstructive emphysema.

(3) Space occupying conditions in the pleura, such as pneumothorax, hydrothorax or extensive pachypleuritis.

C. Cardiac:

(1) Decompensation of the heart.

(2) Hydrothorax.

(3) Congenital heart disease with a shunt.

"Wheezing alone occurs if there is localized, partial obstruction of the airway. This may be due to a foreign body, ulceration, stricture or thick secretions.

"The causes of a combination of dyspnea and wheezing are either pulmonary or cardiac. Bronchial asthma is the commonest cause. Tracheal or laryngeal obstruction by a tumor, granuloma or thick secretions may temporarily produce the same symptoms. A large foreign body may also cause dyspnea and wheezing.

"Cardiac causes of dyspnea and wheezing are decompensation with pulmonary edema and paroxysmal nocturnal dyspnea in cases of left ventricular failure."

The above classification is given by Wilson¹ in his excellent consideration of this

1. Wilson, J. L.: Selected Writings by the Staff Members of the Ochsner Clinic, X: 1 (June 30) 1951.



Alabama's Oldest County Board of Censors
Sumter County Medical Society
(Average Age 78.8 Years)

Seated: Left to right—Dr. J. P. Scales, Livingston, Secretary of the Board; Dr. W. J. McCain, Livingston, Chairman.

Standing: Left to right—Dr. J. C. McDaniel, York; Dr. F. L. Hester, Coatopa, R. F. D.; Dr. R. E. Hale, Bellamy.

subject. The New Orleans investigator goes on to tell us that "Roentgenograms of the chest are necessary and films made during inspiration and expiration may give more information than a single film during inspiration. The fluoroscope is also useful in detecting a swing of the mediastinum or segments of the lungs which fail to empty on expiration. The spirometer may indicate diminished vital capacity or, if the vital capacity is normal, the prolonged time of full expiration may show partial obstruction

to expiration, as frequently occurs in pulmonary emphysema.

"Thorough examination of the heart is necessary, including venous pressure readings, electrocardiogram, and determinations of circulation time. The roentgenogram of the chest with measurement of the cardiac diameter is of great value, although hypertrophy of the right ventricle may be present without much evidence observable in the standard postero-anterior film.

"It should always be remembered that

pulmonary and cardiac disease may both be present in the same person. This is particularly true of elderly patients. Moreover, chronic pulmonary disease may result in cor pulmonale. Chronic cardiac disease results in chronic passive congestion and poor pulmonary function. Acute decompensation results in hydrothorax which may further impair the pulmonary function."

Wilson gives us the following table to aid in the differentiation between pulmonary and cardiac dyspnea and wheezing:

		Pulmonary	Cardiac
1. History	Past History:	Allergic manifestations Exposure to dust Chronic cough	Rheumatic manifestations Hypertension, syphilis Hyperthyroidism
	Onset:	Sudden attacks Diurnal Slow progression for years	On exertion Nocturnal Steady downward progression in weeks
	Relief by:	Lying down Epinephrine	Sitting up Digitalis
2. Examination		Barrel chest	Orthopnea
		Active expiration	Full cervical veins
		Warm cyanosis	Cool cyanosis
		Cardiac apex covered by lung	Wide cardiac area
		Oral wheeze	Abnormal cardiac signs
		Pulse regular	Pulse abnormal
		Liver small	Liver enlarged and tender
		No edema	Ankle edema
		Sibilant rales	Moist rales at bases

And he also tells us that "Bronchoscopy is important for both diagnosis and treatment of patients with wheezing and dyspnea. This procedure is urgently indicated whenever the wheeze is localized to one lung or one lobe.

"A therapeutic trial of a bronchodilator drug is frequently significant. This may be accomplished by the subcutaneous administration of 0.5 cc. of a 1/1000 solution of epinephrine or by the nebulization of a 1/100 solution of epinephrine or vaponephrin. The therapeutic trial of digitalis is worth while in patients having both pulmonary and cardiac manifestations. However, digitalis may be ineffective in patients with cor pulmonale.

"Thoracentesis to remove fluid from the pleural space is sometimes neglected while patients are receiving oxygen. Removal of fluid from the pleural space may give greater relief to the patient than other measures. Phlebotomy for relief of acute pulmonary

edema has largely fallen into disuse, but is still a logical and effective measure in such an emergency."

Wilson has ably considered and well discussed one of the most constantly baffling diagnostic problems. It is especially difficult for physicians seeing the patient for the first time or for practitioners who make calls in the home to decide promptly and correctly whether the trouble is primarily cardiac or pulmonary or possibly a combination of the two. There are no short cuts or

quick and easy methods of arriving at a correct diagnosis in these difficult cases. But studies and suggestions similar to those made by Wilson are a definite help.

LLOYD NOLAND HOSPITAL GIVEN TO ITS NEIGHBORS

The Lloyd Noland Hospital in Fairfield has been presented to a foundation for the benefit primarily of the people of the western sections of Jefferson County by its owner, the Tennessee Coal, Iron and Railroad Company, local steelmaking subsidiary of United States Steel Corporation.

Presentation of the hospital and all of its properties, equipment and facilities, along with a substantial cash contribution for working funds, to the Lloyd Noland Foundation Society was announced by Arthur V. Wiebel, president of TCI.

An additional sum of \$750,000 was donated by TCI to the Foundation for use in erecting

and equipping a new outpatient clinic building to be operated in conjunction with the 350-bed Lloyd Noland Hospital. This, Mr. Wiebel explained, will enable the hospital to give better service to a greater number of people. It will permit the removal of clinic installations from the main hospital establishment, providing additional space for functions and services properly associated with the hospital.

"There has existed for many years," said Mr. Wiebel, "a strong need for a hospital of sufficient size and staff to serve the people living in the western section of this community. Our company, primarily a steel-making enterprise, finds that it can help to meet that need on the part of the people residing in that section. Therefore, it is a prideful privilege on the part of the Tennessee Company to contribute to our neighbors in Ensley, Fairfield, Bessemer and other western communities a hospital well staffed and excellently equipped to meet their medical needs."

Members of the Board of Trustees which will operate the Foundation of Jefferson County are W. A. Belcher, Dr. J. L. Parsons, Charles A. Long, E. W. Berry, Jr., Dr. E. B. Robinson, Jr., Ralph W. Wadeson and F. M. Hansen. Mr. Belcher, who resides on the Bessemer Super-Highway between Birmingham and Bessemer, is president of the Belcher Lumber Company at Powderly. Dr. Parsons is an Ensley physician. Mr. Long, a resident of Bessemer, is president of the Long-Lewis Hardware Company. Mr. Berry, who lives in Fairfield, manages the Fairfield branch of the First National Bank of Birmingham. Dr. Robinson, successor to the late Dr. Lloyd Noland as medical director of the hospital; Mr. Wadeson, secretary and treasurer of the hospital, and Mr. Hansen, its comptroller, have been with the institution for several years.

"In giving this hospital for the benefit of the communities it will serve, leaders in the communities sought men to direct its governing foundation who were competent and successful in their business undertakings—men who were well known and esteemed among their fellow men. It is my firm conviction that the community selections and the three hospital officials will provide a board of trustees of outstanding capability for the operation of this institution. All of

these men are aware of the responsibilities they have accepted. They will serve them well.

"The first four trustees were selected by the communities. As donors of the Lloyd Noland Hospital and the accompanying monetary contributions, the Tennessee Company selected the other three initial trustees of the Foundation. The selections were all made on the basis of deep consideration of the situation.

"Mindful of the community importance of such an undertaking, we prompted steps to assure that the same gauges and measurements applied in the selection of the initial board would be perpetuated. In the legal instrument establishing the trust, provisions were included whereby the people of the principal western communities will select the succeeding trustees.

"In explaining this, I shall try to avoid use of the legal terminology. The trustees are numbered by positions. The first four trustees will be, respectively, Mr. Belcher, Dr. Parsons, Mr. Long and Mr. Berry. Upon the vacation of these positions through death, resignation or any other cause, their successors shall be designated or nominated by the boards of directors of community and civic organizations of the three communities of the western section of the county.

"The other three trustees are Dr. Robinson, Mr. Wadeson and Mr. Hansen. It is planned that these positions shall be, respectively, the president or administrative head of the Foundation, the treasurer and the comptroller. Only these three trustees shall hold working positions in the hospital, and it is provided that they shall hold trustee positions only so long as they fill those occupations in the Foundation and its institution.

"That, in a layman's language, is the way in which this Foundation has been set in motion, and we of the Tennessee Company feel that it is a good method. Certain it is that the community and civic organizations have as their chief aim the welfare of the community and its people."

Mr. Wiebel explained that provisions had been made whereby the Lloyd Noland Foundation Society, itself an unincorporated society, would be enabled to establish an operating organization for the furtherance of

the Foundation's missions. Formal conveyance of the deeds and other legal documents in Mr. Wiebel's office on August 29 opened the way for this step.

"It is our conviction that the Trustees will operate the hospital on a sound business basis and that they will be able to expand its facilities so that it will continue to grow in usefulness," Mr. Wiebel said. "What we have done is simply provide for the people of the western communities a good institution where they can go and get the professional skills and services of a good, efficient hospital. It is my own highest hope that it will serve that mission well, that it will bring credit to the community and that it will live and prosper through the ages as a continuing memorial to the man whose name it so honorably carries on—the late Dr. Lloyd Noland."

The Lloyd Noland Hospital is regarded in the medical profession as an outstanding institution. Medical graduates from all of the leading schools seek internships there. Through the efforts of the late Dr. Noland and his successor, Dr. Robinson, it has kept abreast of all the established advancements of medical science, both as to equipment and talent. Its approximately 350 beds include

wards, semi-private and private accommodations for both white and Negro patients. In addition to clinics for all principal phases of medicine and surgery, it has a highly modern x-ray department, a fully integrated laboratory, adequate operating rooms, a laundry, a nurse's home, required motor vehicles, and other collateral equipment. Its grounds embrace approximately 41 acres.

The hospital building is five stories high and is of gray brick, fire-proof construction.

"The contribution of the hospital by the Tennessee Company to the community and the resultant Foundation arrangement will now enable the hospital to reach into even greater realms of research," Mr. Wiebel said. "It will open up to the hospital means of participating in grants and endowments for medical undertakings heretofore not available to it as a private institution. This should, I feel, result in further advancement of the entire Birmingham community in the field of medical science.

"Thus the Tennessee Company, a maker of good steel products, gives to—and indeed dedicates to—its neighbors a fine hospital. We hope that it will bring to them health and pride of accomplishment and all the other good things of life."

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

RECAPITULATION

W. A. Dozier, Jr.

Director of Public Relations

A long hard summer has waned, and medical societies are again active after a relatively inactive period. The Alabama Legislature has ended its session; and if affairs go as planned at the time of this writing, Congress is in recess. As the reins are picked up again and the efforts and programs of the Societies are once more made to function properly, it behooves each group to take time to recapitulate.

Three years ago a public relations program was prepared and adopted by the Association. This program was designed as a basis for the county P. R. Committees to

build upon as well as to serve as a guide on the state level. The present seems a good time to look back at the stated program and evaluate past efforts. Then it becomes possible to map plans for the coming months. As one professor once told his classes, "It always helps to go back and touch first base." With that thought in mind, each county P. R. Committee should reread the following and mentally touch first base. Here is our program as originally adopted.

1. Study matters concerning medical service and public health in Alabama.

- a. Study disbursement of doctors and nurses.
- b. Study hospitalization and related facilities available.

- c. Study service available to the medically indigent.
- d. Study the present situation of post-graduate studies within the Association.
2. Actively support the proper functioning of the Hospital Service Corporation of Alabama:
 - a. Endeavor to increase the participating doctors.
 - b. Strive to increase membership by informing the public of what the Corporation offers.
 - c. Work toward greater coverage in areas which are not now properly activated.
3. Actively alert the public through all available channels on:
 - a. Progress of medical service in Alabama.
 - b. Plans of the medical profession for the future.
 - c. Problems of the medical profession in extending medical service.
 - d. The causes of present medical costs.
 - e. How the public can assist in increasing medical service.
4. Study, support, and sponsor proper legislation pertaining to better medical care:
 - a. Study present situation of medicine and public health in legislation.
 - b. Study proposed legislation.
 - c. Sponsor desirable laws.
 - d. Support or oppose legislation according to its aid or detriment to better medical care and better public health for all.
5. Actively encourage the creation and proper functioning of Health and Medical Care Councils.
6. Encourage more doctors and nurses to practice in Alabama—especially in rural districts.
7. Encourage the formulation of plans for the care of the indigent and the medically indigent at the local level.
8. Support the proper functioning of the Hill-Burton Act in Alabama.
9. Stimulate more people to enter medical and nursing schools.
10. Supply educational health information to the public in an effort to create an ever increasing health consciousness.

11. Assist all local units of the Medical Association in carrying out the aims of the Association.

12. Offer services to any group or groups who are conscientiously trying to improve health and medical care.

Education in General Practice—In our enthusiasm to encourage interns and residents to go into general practice, general practice internships and residencies have sprung up on every hand. Many of those responsible for them have been disappointed because the positions are not readily filled. Certain men use this fact as an argument against the genuine interest of young men in general practice and of the future position of general practice in the medical fraternity. It seems to me that many such internships and residencies would fail, because of lack of proper understanding of the responsibilities of those conducting them, to provide educational training for the men appointed. The modern medical graduate is no longer interested in serving an apprenticeship and wasting time for the sake of that alone, but is demanding active training in whatever field he desires to engage in. It is my personal belief, not supported by any statistical survey, that those general practice internships and residencies in hospitals staffed in large measure by general practitioners and handling a very general type of work, where the staff is interested in and devotes sufficient time to the conduct of a training program, are well filled and enthusiastically supported by the trainee. Many of us have been active in encouraging our teaching schools to set up internships and residencies. Again, to my mind, this appears to be unwise because of the type of material seen in such an institution. Inasmuch as the staff is 100 per cent specialists, it is natural that the majority of the patients admitted to such an institution will present bizarre illnesses. Such cases are essential in the training of a specialist within the many fields in medicine. They are of interest to the general practitioner. They have no essential place in the training of the general practitioner, while they are essential to the training of the specialist. Therefore, we should be much better off if we encouraged our medical schools to stick to the training of specialists and to encourage their graduates interested in general practice to accept internships and residencies in small general hospitals which have active teaching programs and which may or may not be actively affiliated with the medical school concerned for ward rounds and clinical supervision.

If you then ask what would be the responsibilities of the head of the general practice department in such a school if general practice internships and residencies are not available, I would offer the suggestion that the medical school undertake to supply general practice interns and residents on a rotating basis in general hospitals reasonably accessible to the school concerned.—*Boyd, South. M. J., September '51.*

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION**D. G. Gill, M. D.****State Health Officer****QUEEN ANNE'S BABIES AND YOURS**

You have probably read in your history books about Queen Anne. She reigned as sovereign of Great Britain and Ireland for about twelve years in the early part of the eighteenth century. In addition to being a queen, she was also the mother of 17 children. Sixteen of them died in infancy, and the other one died quite young; in fact, at the age of 11.

Possibly Queen Anne was more unfortunate than many other women in her day in her efforts to keep her babies with her. But, in the absence of reliable information, there is no way of telling. Nevertheless, we have good reason to think that her experience in child-raising was little or no worse than the usual experience of her time. For, as a reigning monarch, she certainly should have received the best medical care available, both before and after the birth of each baby. Like other members of the royal family, she should have been free from the heavy physical toil that sometimes makes childbirth and infancy hazardous. She should have enjoyed educational advantages superior to those received by commoners. So it would seem that her babies would have had a better chance of living than almost any other babies in all Great Britain or Ireland. But the scanty records tell us that she was 100-per-cent unsuccessful in raising them. How heavily the cards must have been stacked against less-favored mothers of her time!

Even the least favored Alabama mother has a vastly more promising outlook for her babies than Queen Anne had. Thanks to a great advance in medical knowledge and the making available of that knowledge and its fruits to anyone willing to take advantage of it, an Alabama baby or, for that matter, a baby born in any other progressive state or nation, does not begin life under anything like such frightful odds. Indeed a modern baby is usually born with an excellent

chance that it will not only be alive but healthy at the end of its period of infancy.

Let us be more specific. Let us see what the odds currently are for a newborn baby in Alabama.

The latest information on an annual basis is that for 1950. And the reports presently available for that year are provisional, which means they are tentative, subject to slight change when the final tabulations have been made of the final reports from all over the state. But, on the basis of those provisional 1950 reports, we find that 81,159 babies were born during that 12-month period, exclusive of stillbirths. During that same 12-month period, there were only 2,982 deaths among babies less than a year old. That gave a ratio of about one infant death for every 27 births. (Compare that with the ratio of 16 infant deaths out of 17 births among Queen Anne's babies!)

That is progress indeed. It is something to be proud of. But your family doctor is not satisfied with it. Neither are the pediatricians. Neither are the public health agencies. Even one infant death out of every 27 births is too many, if it can be prevented. For, remember, every infant death is not just a cold-blooded statistic. It is a real and grim personal tragedy. It is a saddened household. It is a grief-stricken family. It must be prevented, if those responsible for child health and safety can prevent it.

From time to time our tendency to be content and self-satisfied receives a sharp, rude jolt. We realize how far we still are from complete success in making babyhood safe. We have forced upon us the consciousness that we must keep struggling against babyhood's still unconquered enemies.

Such a jolt came some time ago. It took the form of a report by the Philadelphia Board of Education. That report indicated that only one pupil out of every five in the Philadelphia public schools was found to be physically normal. The report was based upon the school system's physical examinations.

The school's medical examiners check half of the pupils every year. So that report applied to only half of them. But that half is believed to have been representative of the whole. And, among that large group of fairly typical American youngsters, about one pupil out of every six, on an average, had poor posture, flat feet or some other defect of an orthopedic nature. More than three out of four had defective teeth. (An encouraging fact, however, was that half of those dental defects had been remedied, presumably since the examinations were completed.) About 11 per cent were underweight; more than eight per cent were physically abnormal at the other extreme—they were overweight. About 10,000 children were found to be incapable of seeing properly, while nearly 1,000 were suffering from defective hearing. An unusually sad note was sounded by the announcement that 12 per cent of the physical defects found—that was about one out of every eight—could not be remedied.

No reports of a similar nature are available for Alabama school children, as far as is known. But enough is known to make our doctors and public health officials realize that many Alabama youngsters have physical defects of one kind and another.

One of the most encouraging signs of the times, child-health-wise, is the increased interest our people are taking in the physical well-being of our youngsters. Child health is receiving more and more attention at our public meetings. That is not true of meetings of health workers alone. Others are also showing a growing determination to reduce child-health hazards to the lowest point possible.

Typical of this newer and more promising trend in our state and national thinking was the discussion of child health by Dr. John P. Hubbard, of Philadelphia. At the time he discussed child health problems with a reporter for *The New York Times*, he was a member of the faculty of the University of Pennsylvania Medical School and also a member of the staff of the Children's Hospital, also in Philadelphia. He, presumably, is still associated with both institutions.

The Philadelphia pediatrician called attention to the close relationship between child health and adult health. Because of

that relationship, he said, it is essential that children receive the type of medical care they need to keep themselves in the best possible health.

He said:

"Cures for cancer, heart disease, mental illness—important in themselves—are less vital to the nation's well-being than the over-all health of our children."

Dr. Hubbard called the problem of making good medical care available to all children of all ages the nation's most important health problem. And he made it plain that he was thinking in terms of better child health for everyone, the poor, as well as the rich and the moderately well off, the baby born into a secluded rural family in Alabama or Arizona, as well as the newest arrival in a metropolitan hospital's maternity pavilion.

Modern medicine can set up strong protective walls against the enemies of child health, he declared. But, he also pointed out, modern medicine can be effective only to the extent to which it is applied. He urged that parents acquaint themselves with the child health facilities in their own communities, both those available from private physicians and child specialists in private practice and also those provided by the public health agencies. He was not thinking particularly of Alabama of course. But, if he had been, he undoubtedly would have called attention to this state's many well trained and thoroughly experienced specialists in the health problems of children, whose services are available to those able to pay for them. But he would also have called attention especially to the well-baby clinics conducted by county health departments in cooperation with the State Department of Health. He would have reminded his interviewer, and, through her, the readers of her paper, of the many places in this state where the indigent and medically indigent may take their children for protective immunizations against diphtheria, smallpox, whooping cough, etc. And he would have told them that these life-saving services were entirely free to those unable to pay the usual fees of physicians and pediatricians. They still are of course.

An important reason why even the poorest Alabama baby of our day has a vastly better chance of staying alive than even a

royal infant in Queen Anne's day is that prevention—something virtually never heard of in the eighteenth century, in terms of health—is getting more and more attention. That is something else Dr. Hubbard would like to see more of. So would many other leaders in child health.

In spite of the greater emphasis nowadays upon preventive child health, as well as preventive health generally, some segments of the population seem to be getting much more than others. And rural children appear to be receiving the short end of the preventive care deal. That, of course, is unfortunate for youngsters living in Alabama and other states that are predominantly rural. Dr. Hubbard produced some figures which are illuminating, if somewhat disturbing. According to his estimate, there are about 36,000,000 children in the United States. Of this total, he said, about 13,000,000, or some 36 per cent, live in what the Philadelphia specialist called "outlying areas." Their failure to get their full proportionate share of such care he attributed to the fact that the general practitioner in those areas is kept so busy with his other work that he does not have time to do much about preventive child care.

Dr. Hubbard continued:

"The advances in regard to health in childhood are partly responsible for our increasingly adult population. For instance, in 1900 there were 40 diphtheria deaths per 100,000 population. In 1946 this decreased to one death per 100,000."

Fortunately for us Alabamians, this state has shared generously in the gains which Dr. Hubbard mentioned as having been made by the country as a whole. Our vital statistics reports do not go back to 1900, as his do. But we have them for the years 1913 through—not 1946—but 1950, although the 1950 rates are provisional. And between those two years—1913 and 1950—our diphtheria death rate dropped from 6.6 to 0.8 per 100,000, or 88 per cent. During that same period, our scarlet fever death rate dropped from 0.8 per 100,000 population to zero. (Not a single Alabama death was attributed to scarlet fever during that 12-month period.) Whooping cough killed 6.6 Alabamians per 100,000 in 1913, only 1.7 per 100,000 in 1950. That was a decline of 74 per cent. The 1913 measles death rate was 3 per 100,000 population. The provisional 1950 rate was 0.3 per

100,000 population, or only 10 per cent of the 1913 rate. There were similar declines in other diseases affecting child health directly and adult health indirectly. As proof of that, consider the infant mortality rates (covering infant deaths from all causes combined) for the two years we are considering. The 1913 rate was 61.9 per 1,000 live births. The provisional 1950 rate was only 36.7 per 1,000 live births. A decline of 40 per cent in 37 years means that real progress has been made in protecting child health.

But, let us not forget, much still remains to be done. Like other rural states, Alabama has health problems peculiar to her rural status. She has other health problems not faced by any other state, at least to the same extent. But we are indeed making progress. The state's public health agencies not only are providing health-protection services to as many children as possible. They are also telling parents about these services. They are doing all they can to persuade people everywhere to avail themselves of them. If they succeed in that, even greater progress will be made in the years ahead. Then Alabama babies will have an even greater advantage over the babies of Queen Anne's time. We may even hope that eventually a sick baby will be as rare in Alabama as a well baby was in the Great Britain and Ireland that she ruled.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

August 1951

Examinations for diphtheria bacilli and Vincent's	277
Agglutination tests (typhoid, Brill's and undulant fever) ..	1,632
Typhoid cultures (blood, feces and urine) ..	1,057
Brucella cultures	24
Examinations for malaria	1,353
Examinations for intestinal parasites	4,528
Serologic tests for syphilis (blood and spinal fluid)	25,863
Darkfield examinations	6
Examinations for gonococci	2,047
Examinations for tubercle bacilli	3,316
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	74
Water examinations	1,870
Milk and dairy products examinations	4,702
Miscellaneous	950

Total 47,699

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1951

	June	July	E. E.* July
Typhoid and paratyphoid	11	11	15
Undulant fever	2	7	1
Meningitis	13	9	10
Scarlet fever	24	12	29
Whooping cough	176	62	116
Diphtheria	13	8	16
Tetanus	5	4	3
Tuberculosis	314	191	251
Tularemia	0	0	0
Amebic dysentery	2	0	2
Malaria	0	7	162
Influenza	87	39	27
Smallpox	1	0	0
Measles	721	141	89
Poliomyelitis	47	119	33
Encephalitis	4	0	1
Chickenpox	75	17	13
Typhus	4	5	36
Mumps	696	46	62
Cancer	396	307	286
Pellagra	2	2	4
Pneumonia	130	58	117
Syphilis	444	276	1158
Chancroid	7	6	14
Gonorrhea	352	294	613
Rabies—Human cases	0	0	0
Positive animal heads	26	19	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

Biologic Warfare—In peacetime it is routine to test water, milk and certain food products to estimate their sanitary quality and assure their safety. Under certain circumstances, largely experimental until now, air is tested in limited areas to determine its bacteriologic content.

None of these peacetime methods is immediately applicable for detection of agents of biologic warfare. Many of them depend on reasoning from indirect evidence. However, basic principles can be adapted to examination of air, water, and milk for the purpose of detecting biologic warfare agents, and equipment now in use can be suitably modified for such purposes.

These measures, however, have serious limitations at present: (1) Even for bacteria readily grown on artificial media, a number of hours are required for cultures to develop sufficiently to permit accurate identification; (2) isolation of viruses and rickettsiae require animal inoculations, and usually several days must elapse before identification can be accomplished; (3) nonliving toxic products of microorganisms can be identified only after time-consuming animal tests; (4) it is not known whether sampling devices and isolation technics now available would be efficient enough to collect identifiable material even though pathogenic agents were present in adequate quantities to produce human disease.

While these limitations must be faced, they do not justify a policy of inaction or delay. Some of the simpler operations of sampling and identification should be put into effect, and it may be anticipated that experience and research will ultimately overcome many of the initial difficulties, while others can be minimized by efficient organization.—Haas, M. Ann. District of Columbia, Sept. '51.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR MAY 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During May 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	6102	**	**	23.3	22.4	22.4
Total stillbirths	182	**	**	29.0	25.5	32.0
Deaths, stillbirths excluded	2201	1310	891	8.4	8.3	8.1
Infant deaths:						
under one year	167	94	73	27.4	38.7	37.4
under one month	124	74	50	20.3	25.8	25.3
Causes of Death						
Tuberculosis, 001-019	72	28	44	27.5	33.5	30.6
Syphilis, 020-029	16	4	12	6.1	4.2	5.4
Dysentery, 045-048	1	1		0.4	1.2	1.2
Whooping cough, 056	2		2	0.8	1.9	0.4
Meningococcal infections, 057	1	1		0.4	1.5	0.4
Encephalitis, 082, 083	1	1		0.4	0.4	
Measles, 085	5	3	2	1.9	1.9	3.1
Malaria, 110-117					1.2	1.2
Malignant neoplasms, 140-200, 202, 203†	219	156	63	83.7	78.1	79.5
Diabetes mellitus, 260	21	14	7	8.0	5.8	8.5
Pellagra, 281	3	3		1.1	0.8	2.3
Vascular lesions of central nervous system, 330-334	273	158	115	104.3	98.5	98.4
Other diseases of nervous system, 300-318, 340-398	34	16	18	13.0	11.2	15.9
Rheumatic fever, 400-402	6	2	4	2.3	1.9	2.3
Diseases of the heart, 410-443	696	434	262	265.9	254.4	229.8
Diseases of the arteries, 450-456	32	21	11	12.2	10.0	13.2
Other diseases of the circulatory system, 444-447, 460-468	26	11	15	9.9	10.4	12.4
Influenza, 480-483	27	17	10	10.3	9.2	9.7
Pneumonia, 490-493	76	42	34	29.0	24.6	21.3
Bronchitis, 500-502	1	1		0.4		1.6
Appendicitis, 550-553	4	3	1	1.5	1.9	1.9
Intestinal obstruction and hernia, 560, 561, 570	12	8	4	4.6	6.2	4.3
Gastro-enteritis and colitis (under 2), 571.0, 764	3		3	1.1	4.6	4.3
Cirrhosis of liver, 581	9	8	1	3.4	5.0	5.4
Diseases of pregnancy and childbirth, 640-689	17	10	7	27.0	21.8	20.1
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	4	4		6.4	3.4	6.7
Congenital malformations, 750-759	18	11	7	2.9	4.6	6.1
Accidental deaths, total, 800-962	168	115	53	64.2	62.7	48.8
Motor vehicle accidents, 810-835, 960	75	55	20	28.7	30.8	22.9
All other defined causes	375	205	170	143.3	143.9	147.3
Ill-defined and unknown causes, 780, 793, 795	83	37	46	31.7	42.3	42.6

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the May report of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

MANY TESTS NECESSARY IN DIAGNOSIS OF GASTRIC ULCER

The only proper way to tell whether a gastric ulcer is cancerous or not is by the combined use of many clinical findings, it was reported in the September 29 Journal of the American Medical Association.

A diagnosis based on such singular findings as the size of the ulcer crater, its location in the stomach, or the age of the victim is not sufficient according to the authors of the article, Drs. R. P. Boudreau of Philadelphia, J. P. Harvey, Jr., of Cleveland, and S. L. Robbins of Boston.

"The differentiation, on purely clinical grounds, of a benign from a malignant gastric ulcer, while one of the most commonplace problems in medicine, is one of the most perplexing," the doctors wrote.

The doctors' report was based on a post-mortem study of 234 cases of gastric ulceration, 168 of which were benign and 66 malignant. The ratio of men in the total group was 2.5 to one. The ages ranged from 50 years upward.

The largest number of malignant cases of gastric ulcers, 28, was found in the age group of 60 to 69 years, while the largest number of non-malignant cases, 58, was in the group of 70 to 79 years.

The report pointed out that approximately 67 per cent of the non-malignant ulcers found were less than three-quarters of an inch in diameter, while only 20.6 per cent of the malignant ones were that small.

"However, it is not the relative incidence that is important, but the fact that malignant ulcers may be small; or contrariwise, not all small ulcers are benign," the doctors stated.

As to the location of the gastric ulcer, the report pointed out that "there is no area of the stomach immune to malignancy."

Two of the greatest complications of gastric ulceration are hemorrhage and perforation, according to the report. In the group studied, perforation occurred in 18

per cent of the benign ulcerations, compared to 12 per cent of the malignant ones. Hemorrhages occurred in 37 per cent of the non-malignant cases, against 27 per cent in the cancerous ones.

Hemorrhages were the leading cause of death in benign gastric ulcers, the report pointed out, accounting for 26 per cent of the mortality. Heart conditions ranked second, causing 20 per cent of the deaths, and perforation with peritonitis third, with 17 per cent.

In the malignant forms of gastric ulceration, 54 per cent of the victims died as a result of the extensive spreading of gastric cancer from one organ to another. Only 12 per cent of the deaths were attributed to hemorrhages and nine per cent to perforation with peritonitis.

"This study serves to reemphasize the fallibility of absolute dependence on any clinical feature in the differential diagnosis of benign and malignant gastric ulcers," the report concluded.

"The proper diagnosis, when possible, can be arrived at only by the use of many clinical findings, each of which is of uncertain significance but whose combined value may permit a reasonably accurate decision."

A. M. A. SUPPORTS BILL BANNING SALE OF FIREWORKS

The American Medical Association has filed a statement with the House Judiciary Committee supporting its bills restricting the sale of fireworks.

The statement said that the medical profession for many years "has been concerned with the serious menace to life and health resulting from the use of fireworks." It added that the Association is in favor of proposals such as the bills under consideration, "which are designed to alleviate health hazards of this type."

The bills would prohibit the shipment of fireworks into any state or political subdivision in which their sale is prohibited, unless intended for public displays or other purposes specifically authorized by law.

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COR PULMONALE

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Decatur, Alabama

Included under the term cor pulmonale is a group of pulmonary diseases which directly or indirectly produce right ventricular strain and certain extrapulmonary diseases which produce similar effects on the right side of the heart. In speaking of cor pulmonale one assumes that the right ventricle is acting independently to alterations in the lesser circulation.

Cor pulmonale may exist in acute, subacute and chronic types. The chronic type is the most common and the subacute type the least common of the three.

Acute cor pulmonale is generally caused by massive pulmonary emboli. If over 60 per cent of the vascular bed is occluded in this form, death will result almost immediately.

Subacute cor pulmonale is most commonly caused by secondary lymphatic carcinomatosis of the lungs. Less common causes are involvement of the smaller pulmonary vessels by emboli¹ and pulmonary thromboses produced in patients with sickle cell anemia.² Chronic cor pulmonale results from a much greater variety of anatomic and functional changes. These changes may be grouped broadly into those involving

primarily (1) the thoracic cage, (2) the pulmonary vascular tree, and (3) the lung tissue itself. In some cases, changes in all three groups operate in producing right ventricular strain. The various conditions which result in increased pressure within the pulmonary circuit may be classified in still another manner: (1) obstructions beyond the pulmonary circuit, (2) obstructions within the pulmonary circuit, (3) abnormal shunts of blood from the arterial side into the pulmonary circulation as is the case in certain types of congenital heart disease, and (4) kyphoscoliosis. Alterations in the lung parenchyma or obstructions within the pulmonary circuit are the conditions responsible for the majority of cases of cor pulmonale.

The frequency and incidence of chronic cor pulmonale have been variably reported. Out of 6,548 consecutive autopsies, Scott and Garvin³ found 890 cases of cardiac disease; 50 of these 890 cases, or 6.3 per cent, were cases of cor pulmonale. The most common etiologic factor in these 50 cases was found to be emphysema (obstructive, hypertrophic), either alone (32 cases) or in combination with silicosis, tuberculosis, or silico-tuberculosis. Spain and Handler⁴ found a similar distribution of etiologic factors in their 60 cases. The incidence of right ven-

From District No. I Tuberculosis Sanatorium.

1. Brill, I. C., and Robertson, T. D.: Subacute Cor Pulmonale, *Arch. Int. Med.* 60: 1043-1057 (Dec.) 1937.

2. Yater, W. M., and Hansmann, G. H.: Sickle Cell Anemia: New Cause of Cor Pulmonale; Report of Two Cases with Numerous Disseminated Occlusions of Small Pulmonary Arteries, *Am. J. M. Sc.* 191: 474-484 (April) 1936.

3. Scott, R. W., and Garvin, C. F.: Cor Pulmonale: Observations in Fifty Autopsy Cases, *Am. Heart J.* 22: 56-63 (July) 1941.

4. Spain, D. M., and Handler, B. J.: Chronic Cor Pulmonale: Sixty Cases Studied at Necropsy, *Arch. Int. Med.* 77: 37, 1946.

tricular hypertrophy in pulmonary tuberculosis varies markedly with different reports. X-ray, fluoroscopic, and electrocardiographic findings in our institution would indicate a small percentage. However, Higgins,⁵ utilizing the method of Herrmann,⁶ in which the right ventricle is dissected away from the left ventricle at autopsy and the relative degree of hypertrophy of the two ventricles is estimated, found an incidence of right ventricular hypertrophy in pulmonary tuberculosis of 40 per cent. Nemet and Rosenblatt⁷ found that thirty-three of seventy-one tuberculous patients examined postmortem had right ventricular hypertrophy unassociated with other heart disease, an incidence of 46.5 per cent.

DIAGNOSIS AND CLINICAL PICTURE

The condition of acute cor pulmonale occurs in a small number of patients with pulmonary embolism in which immediate death does not occur but in whom the obstruction is large enough to overload the right side of the heart. The symptoms and signs are those of sudden dyspnea, chest pain, tachycardia, cyanosis, and shock. Later, pulmonary infarction may occur, especially when there has been an abnormal lesser circulation antedating the embolism.

The diagnosis of the early phase of chronic cor pulmonale is difficult because the signs and symptoms of the underlying pulmonary disease dominate the clinical picture. In this phase there are no symptoms or signs of right heart failure. The dyspnea, cyanosis, polycythemia and clubbing of the fingers so often noted are the result of pulmonary insufficiency and may be present for months or years before the stage of right heart failure, with its enlarged liver, generalized edema, engorged neck veins, increased venous pressure, and slow circulation time, is reached. Since, in most cases, the onset of heart failure is insidious one must rely upon a high index of suspicion, an

increase in dyspnea, increase in cough, the appearance of orthopnea hitherto not present, and an intensification of the cyanosis in order to detect the cardiac involvement. Swelling of the ankles is a rather late manifestation but is often the presenting complaint. Occasionally, the onset of heart failure will be fairly acute, precipitating factors in these cases being intercurrent infections of the respiratory tract and superimposed allergies, such as bronchial asthma.

Since emphysema is the most frequent underlying pulmonary condition the physical signs pertaining to the heart are often obscured. Thus, the cardiac borders are difficult to determine by percussion, the point of maximum cardiac impulse frequently cannot be seen or palpated, the cardiac sounds are distant, and murmurs are hard to auscultate. However, in the vast majority of cases, the second pulmonic sound will be accentuated, indicating pulmonary hypertension.

In evaluating the role of underlying pulmonary disease in the production of pulmonary hypertension and right heart failure a careful history to uncover preexisting left heart failure and its various causes is most important. In the age group in which chronic cor pulmonale with its coexisting pulmonary conditions is apt to occur, one also encounters such conditions as arteriosclerosis, coronary artery disease, hypertension, syphilitic aortitis, and chronic valvular heart disease. Each must be considered in the pathogenesis and differential diagnosis. It must be remembered that left ventricular failure is by far the most frequent cause of right heart failure.

Patients with chronic pulmonary disease should be followed with frequent periodic physical examinations, symptom reviews, teleoroentgenograms, and electrocardiograms.

The heart shadow on x-ray and fluoroscopic examination shows great variation. There may or may not be enlargement of the shadows of the right ventricle and pulmonary artery. The classic roentgenographic picture of cor pulmonale is frequently masked or hidden by alterations of the chest or by underlying pulmonary conditions. In emphysema, the depression of the diaphragm, with elongation of the heart and elevation and widening of the thoracic cage,

5. Higgins, G. K.: The Effect of Pulmonary Tuberculosis upon the Weight of the Heart, *Am. Rev. Tuberc.* 49: 255-275 (March) 1944.

6. Herrmann, G. R.: Experimental Heart Disease: Methods of Dividing Hearts with Sectional and Proportional Weights and Ratios for Two Hundred Normal Dogs' Hearts, *Am. Heart J.* 1: 213-231 (Dec.) 1925.

7. Nemet, G., and Rosenblatt, M. B.: Cardiac Failure Secondary to Chronic Pulmonary Tuberculosis: A Necroptic and Clinical Study, *Am. Rev. Tuberc.* 35: 713, 1937.

makes the determination of the cardiothoracic ratio of little value. Parkinson and Hoyle⁸ found evidence of dilatation of the pulmonary conus on roentgenograms in 80 per cent of their cases of emphysema. This may be the only change pointing to enlargement of the right ventricle and is probably the most important early roentgenographic finding. Comparative study of periodic x-ray and fluoroscopic examinations is of greatest value in detecting small degrees of enlargement of the right heart and pulmonary artery. Contrast visualization of the heart chambers by diodrast shows great promise in the diagnosis of early right ventricular hypertrophy and pulmonary artery abnormalities.

Electrocardiograms are of benefit in the diagnosis of chronic cor pulmonale only if there are abnormalities such as definite deviation of the electrical axis to the right, and perhaps low voltage. There may be only a tendency to right axis deviation as evidenced by deep S waves in lead I. The diagnosis of chronic cor pulmonale must frequently be made in the absence of electrocardiographic abnormalities. However, when right axis deviation or a tendency to right axis deviation is found, it is of great value in establishing the diagnosis.

In acute cor pulmonale, in addition to the above mentioned electrocardiographic findings, there may be fleeting changes such as a depressed S-T take off in lead II, followed by a rising S-T segment and a low, upright, or diphasic T wave, and in lead IV a moderately deep Q wave, slight convexity of the S-T segment, and an inverted T wave.⁹

Laboratory findings in chronic cor pulmonale are variable and inconsistent. Not all cases show polycythemia and there appears to be no correlation between the onset and severity of failure and the degree of polycythemia when present.⁴ The diagnosis may be made in the absence of polycythemia. Circulation times correlate well with the degree of failure, and a slowing of the blood flow through the right heart ("arm to

lung" time) usually indicates right ventricular failure.⁴

Other laboratory findings which may indicate that cardiac failure is superimposed on pulmonary insufficiency are increased arteriovenous oxygen differences, sudden progressive decrease in the vital capacity, an increase in blood volume (both cell and plasma volumes) and the results of cardiac catheterization studies. Kountz and Alexander,¹⁰ in their cases, found that the venous pressure was consistently elevated in emphysema alone and Spain and Handler⁴ found the venous pressure to be of questionable diagnostic value, many cases of severe right heart failure having normal or even low values. It is difficult to establish the level of the auricle in patients with extreme emphysema and therefore venous pressure determinations are subject to error. However, the venous pressure in right ventricular failure is usually elevated to at least 15 cm. or over. By manual pressure exerted over the right upper quadrant of the abdomen the supply of blood to the right side of the heart is momentarily increased and there is an added increase in venous pressure. This maneuver is useful as an additional means of detecting incipient right heart failure. A rise in venous pressure above normal following the intravenous administration of 1500 ml. of normal saline during a 30-minute period is indicative of right heart failure. This test, however, obviously may be dangerous and should be used only under exceptional circumstances.

From the above discussion it is apparent that the diagnosis of cor pulmonale is difficult at best before the onset of signs and symptoms of manifest cardiac failure. Yet, if we are to devise and apply measures to ward off cardiac failure and its crippling residua, we must detect the presence of cor pulmonale early.

It is important from the standpoint of diagnosis, pathogenesis and treatment to recognize that cor pulmonale may coexist with other heart diseases such as hypertension and coronary arteriosclerosis and yet play the largest part in the production of symptoms and disability.

8. Parkinson, J., and Hoyle, C.: Heart in Emphysema, *Quart. J. Med.* 6: 59-86 (Jan.) 1937.

9. Murnaghan, D.; McGinn, S., and White, P. D.: Pulmonary Embolism with and without Acute Cor Pulmonale, with Especial Reference to the Electrocardiogram, *Am. Heart J.* 25: 573, 1943.

10. Kountz, W. B., and Alexander, H. L.: Emphysema, *Medicine* 13: 251-316 (Sept.) 1934.

PATHOGENESIS

Obstruction beyond the pulmonary circuit producing pulmonary hypertension and right ventricular strain occurs in mitral stenosis, in which condition the blood flow from the lungs to the left auricle is mechanically impeded since there are no valves at the mouths of the pulmonary veins. In long standing cases of mitral stenosis the arterioles of the lungs may become obliterated, further increasing the work of the right ventricle. A failing left ventricle may cause pulmonary hypertension by overloading the pulmonary system and occasionally will cause enough hypertrophy of the right ventricle to produce right axis deviation on the electrocardiogram.

Abnormal shunts of blood into the pulmonary circulation, especially if the volume of blood is large, may produce pulmonary hypertension and cor pulmonale. Examples of these abnormal shunts of blood are patent ductus arteriosus, septal defects, and acquired arteriovenous shunts, an example of which is gradual rupture of an aortic aneurysm into the pulmonary artery.

The mechanism by which thoracic deformities such as kyphoscoliosis and funnel chest produce chronic cor pulmonale is not at all clear. In many of these cases there is far advanced pulmonary emphysema which undoubtedly is an important factor.¹¹ Furthermore, it is possible that the larger pulmonary vessels may become kinked and obstructed by the displacement of the mediastinal structures. Marked funnel chest may produce obstruction by compression. Large portions of the lungs in thoracic deformities may be atelectatic. Chronic bronchitis is also frequent in these cases. It is well known that a good majority of hunchbacks ultimately succumb to heart failure.

Thoracoplasty of long standing may be associated with chronic cor pulmonale. The exact mechanism is not known. However, in these cases pathologic findings are compensatory emphysema, obstructive emphysema with fibrosis, sclerotic pulmonary arterioles and arteries coexisting with the underlying pulmonary disease (e. g., tuberculosis). In our institution definite evidence of chronic cor pulmonale following exten-

sive thoracoplasties for tuberculosis is infrequent. Frank cardiac failure in our cases has not occurred. Furthermore, by the use of pulmonary function tests we are able to predict the possibility of pulmonary insufficiency, dyspnea and anoxemia following thoracic surgery and either "tailor" the operation to fit the patient, avoid surgery altogether, or recommend it as a "salvage" measure.

Obstruction within the pulmonary circuit may produce acute, subacute or chronic cor pulmonale depending upon the size of blood vessels obstructed and somewhat upon the rapidity of obstruction. Thus, the main pulmonary vessels may be occluded suddenly by an embolus resulting in acute cor pulmonale. A more gradual thrombotic process in the larger pulmonary vessels has been described in thrombo-angiitis obliterans and in peripheral venous thrombosis resulting in a subacute cor pulmonale. Examples of occlusion of the smaller medium sized pulmonary vessels producing subacute cor pulmonale are found in sickle cell anemia where there may be widespread thrombosis and endarteritis²; in metastatic lymphangitic carcinoma of the lungs where there is perivascular lymphatic infiltration and proliferative connective tissue changes¹; and in schistosomiasis where there are granulomatous lesions with obliteration of many small arteries.¹

Primary pulmonary arteriolosclerosis (Ayerza's disease) is a rare cause of chronic cor pulmonale. The cause of this condition has not been determined. Ayerza's contention that syphilis is an important factor has never been proven. Most cases occur in women, whereas cor pulmonale caused by emphysema is by far most frequent in males.

Changes in the lung parenchyma causing chronic cor pulmonale are most commonly those of primary obstructive emphysema with or without fibrosis. Primary obstructive emphysema may be the only underlying pulmonary condition responsible for right heart strain and failure. For instance, pulmonary arteriolosclerosis sometimes accompanies the emphysema but is frequently absent and is probably only a secondary change. Pulmonary fibrosis often accompanies the emphysema but is frequently localized and nodular instead of fine and diffuse, therefore probably contributes little

11. Hertzog, A. J., and Manz, W. R.: Right-Sided Hypertrophy (Cor Pulmonale) Caused by Chest Deformity, *Am. Heart J.* 25: 399-403 (March) 1943.

to the increased resistance to blood flow. The compensatory polycythemia which may occur in emphysema may contribute to the development of cor pulmonale but is not a primary mechanism. Granting that emphysema alone can cause increased resistance to the flow of blood through the lungs, what is the exact mechanism? Obliteration of the pulmonary vascular bed is one explanation. However, at least in experimental animals, 80 per cent of the vascular bed must be obliterated before any changes occur in the right ventricle. Furthermore, cor pulmonale is infrequent in advanced bullous emphysema where there is much anatomic obliteration of blood vessels in the alveolar septa. In emphysema the lungs are in a constant state of over-distention and the intra-alveolar pressure has been shown to be increased at least during expiration. It may be that when the lung expands the increased pressure is exerted at the expense of compressible structures such as the capillaries and small blood vessels within the intra-alveolar septa thus increasing resistance to the flow of blood and placing a strain on the right ventricle.

Other changes in the lung parenchyma which may be responsible for chronic cor pulmonale are those occurring in pulmonary tuberculosis, bronchial asthma, silicosis, bronchiectasis and scleroderma. Most cases of cor pulmonale developing in pulmonary tuberculosis have associated emphysema. Ackerman and Kasuga¹² found no definite correlation between the types and complications of tuberculosis and the incidence and degree of right ventricular hypertrophy. Higgins⁵ stated the opinion that the secondary emphysema resulting from fibrosis in pulmonary tuberculosis may be the most likely pathogenic factor.

In bronchial asthma the mechanism operating to produce cor pulmonale is probably the associated emphysema with its constant expiratory increase of intra-alveolar pressure. The degree of right ventricular hypertrophy appears to be in direct relation to the duration of asthmatic attacks and the degree of emphysema. In silicosis and bronchiectasis the fine diffuse fibrosis is respon-

sible for obstructive emphysema which in turn gives rise to cor pulmonale. The massive nodular fibrosis frequently found in these cases is not nearly as apt to produce emphysema and cor pulmonale.

TREATMENT AND PREVENTION

Regarding treatment and prevention of chronic cor pulmonale, only a few principles will be mentioned. It is important that all patients with bronchial asthma, chronic bronchitis, bronchiectasis, and chronic pulmonary infections be treated early and vigorously to prevent anoxemia and right ventricular hypertrophy. Specific bacteriologic diagnosis and the application parenterally or by aerosol of modern antibiotic and chemotherapeutic agents according to the results of bacterial identification and sensitivity tests; surgical therapy of bronchiectasis; the prevention and prompt treatment of intercurrent infections of the respiratory tract; desensitization to allergens; in pulmonary emphysema the use of pneumoperitoneum and breathing exercises to reduce the increased residual air space, all must be considered in the intelligent management of the underlying pulmonary disease. Patients with pulmonary emphysema should be warned against performing hard physical labor, since, in such cases, cor pulmonale is more apt to occur. Cortisone or ACTH may be of value in selected cases of bronchial asthma and berylliosis. Positive pressure oxygen therapy may increase ventilation in cases of marked silicosis.

With the onset of manifest right-sided heart failure, treatment is guided along the same lines as in congestive heart failure from any other cause.

SUMMARY

1. The types and causes of cor pulmonale are discussed.
2. The difficulties of early diagnosis are stressed and the features of the clinical picture are analyzed.
3. Mechanisms responsible for the production of cor pulmonale in obstructions beyond the pulmonary circuit, abnormal shunts of blood, thoracic deformities, obstructions within the pulmonary circuit, pulmonary arteriosclerosis, and diseases of the lung parenchyma are discussed.
4. A few principles of treatment and prevention of chronic cor pulmonale are outlined.

12. Ackerman, L. V., and Kasuga, K.: Chronic Cor Pulmonale: Its Relation to Pulmonary Tuberculosis, *Am. Rev. Tuberc.* 43: 11-30 (Jan.) 1941.

ACUTE MYOCARDIAL INFARCTION

A REVIEW OF THE CLINICAL COURSE AND MANAGEMENT OF NINETY CASES

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During the five-year period ending January 1, 1951, 43,007 patients were admitted to the Carraway Methodist Hospital. A diagnosis of myocardial infarction was made on 183. There were 648 deaths in the Hospital, with a diagnosis of myocardial infarction on 46 (17 per cent). Only patients on whom the diagnosis was confirmed by electrocardiogram or by autopsy were considered suitable for study. We excluded from study patients with other severe diseases, such as disabling cardiovascular renal disease, metastatic carcinoma, chronic leukemia, and severe diabetic coma. There remained 90 cases which we finally considered acceptable for review. We found it difficult to include correctly or exclude certain cases in many instances. Other observers must have had the same difficulty. For this reason statistical studies on the incidence and course of myocardial infarction are to be accepted with some reservations.

Twenty-one of our 90 patients with myocardial infarction died during the acute phase of their disease. Of the 69 who survived the acute phase, 8 have not been located, 13 are known to be dead, and 48 living. Of the 48 known to be living, 40 were judged eligible for gainful employment, and 35 had returned to their former jobs.

Thirteen of the 21 patients who died during the acute phase of the disease did so within three days. Many other persons who did not live long enough to get to the Hospital should have been included in this number.

Autopsy of patients dying from coronary occlusion will usually reveal a disease process so extensive as to appear to be incompatible with life. Not infrequently autopsy findings are minimal. Arrhythmias have

been offered as a possible cause of death in such cases. Quinidine¹ has been used to prevent, as well as to correct, such arrhythmias.

The great cause of myocardial infarction is coronary occlusion due to thrombosis secondary to arteriosclerosis, atherosclerosis and intimal degeneration. The mysteries of the causation of degenerative arterial disease are still largely unsolved. The relation of diet, and particularly of fat and cholesterol metabolism, to atherosclerosis is an interesting subject.

Forty-seven (52 per cent) of our patients with acute myocardial infarction had had anginal distress for from three days to several months prior to the acute episode. Eleven (12 per cent) had previously consulted us because of such symptoms. When the manifestations were atypical, we found it difficult to make an unequivocal diagnosis. A carefully evaluated history and the exclusion of other diseases, particularly pulmonary disease, which might cause similar symptoms were the most useful diagnostic procedures. Helpful physical signs were usually absent. The electrocardiogram was frequently normal or suggestive but not conclusive. Many useful techniques have been devised which may prove the existence of coronary insufficiency but none will exclude it. Levine² has found the diagnostic procedure of slowing the heart rate by carotid sinus pressure to relieve the pain of suspected angina pectoris to be useful. If carotid sinus pressure fails to slow the heart rate, the test has no significance.

The difficulty of correctly advising patients with suspected but unproven coronary insufficiency is obvious. Two patients

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1. Falk, O. P. J.: Causes and Prevention of Sudden Death in Coronary Disease, *J. A. M. A.* 119: 1250 (Aug. 15) 1942.

2. Levine, Samuel A.: Heart Disease: Its Medical Aspects, *Ann. Int. Med.* 33: 572-581 (Sept.) 1950.

with gallstones and suspected angina pectoris were observed by us several months before their gallbladders were finally removed. They obtained complete relief of symptoms.

When there is conclusive evidence of coronary insufficiency the problem is not much easier. The prognosis in the individual patient is unpredictable and the treatment unsatisfactory. A former patient of ours who presented definite evidence of angina pectoris and of gallstones later had a cholecystectomy performed elsewhere. Autopsy performed a few hours postoperatively revealed a healed myocardial infarct.

The physician should recognize his limitations in the management of coronary insufficiency and not prescribe a ritualistic, useless form of therapy which may only serve to make the individual more anxious and unhappy. The majority of persons with coronary insufficiency will ultimately develop either congestive heart failure or myocardial infarction and occasionally both. Certain measures, which are applicable to patients with all forms of heart disease, such as weight reduction and the keeping of physical activities below the point of producing dyspnea or angina, will unquestionably tend to delay the development of congestive heart failure. Therapy designed to prevent the development of myocardial infarction is less effectual. Experimental work on fat and cholesterol metabolism and the effects of lipotropic agents, specifically choline, have at the most reached the stage of therapeutic hopefulness in the treatment of patients with unusual susceptibility to arteriosclerosis, atherosclerosis, and myocardial infarction. The premature advertising of unproven techniques by certain drug manufacturers is regrettable. The use of tobacco, undue fatigue, physical exertion of unaccustomed magnitude, emotional upsets, and the use of adrenalin and other vasoconstrictive agents are to be avoided. Papaverine, alcohol, xanthine derivatives and other vasodilating drugs are occasionally useful. We have had no experience with the use of alcohol for this purpose. Nichol and Fassett³ attempted to prevent

recurring coronary thrombosis in a small series of cases by the long term use of dicumarol.

Errors in diagnosis of heart disease, especially coronary disease, have occasionally caused extreme embarrassment to almost every physician. For this reason he tends to be over-cautious and places too much emphasis on minor complaints and questionable physical signs, such as a slight cardiac irregularity or a slight murmur. Actually the heart lends itself to diagnostic study better than most of the other organs of the body. Its functional capacity can readily be determined by the history. The physical signs are not difficult to interpret. The electrocardiogram is useful in classifying the arrhythmias, in evaluating the status of the conductive mechanism, and in establishing or excluding the presence of myocardial infarction. A normal electrocardiogram does not exclude the presence of heart disease.

Errors in diagnosis of acute myocardial infarction can be extremely disconcerting but should not occur too often. A carefully evaluated history with rational interpretation of physical signs and a brief period of observation will establish the diagnosis with a fair degree of certainty. The diagnosis can usually be proven by an electrocardiogram. Dissecting aneurism and pulmonary embolism may occasionally be almost impossible to differentiate from myocardial infarction. It is urgent to exclude a few conditions such as the acute surgical abdomen, diabetic coma, and uremia.

Techniques known to be useful in the management of patients with acute myocardial infarction should be applied according to the needs of the particular individual. A business executive developed a myocardial infarction with symptoms of moderate severity while in New York City. He continued to be ambulatory thinking that he had had an attack of indigestion, and did not consult a physician until he came to our office in Birmingham three weeks later. We permitted him to continue to be ambulatory. No therapy was required other than mild sedatives and some restriction of physical activities. A carpenter was admitted to the Carraway Methodist Hospital within a few hours after developing a myocardial infarction. He required continuous oxygen therapy for fourteen days and was hospitalized

3. Nichol, E. S., and Fassett, D. W.: An Attempt to Forestall Acute Coronary Thrombosis. Preliminary Note on the Continuous Use of Dicumarol, *South. M. J.* 40: 631-637, 1947.

for fifty-eight days. Dicumarol, quinidine, diuretics, papaverine, morphine, barbiturates, atropine and other less important drugs were found useful in his case. Both patients have returned to their former jobs. Such extreme variations in the clinical manifestation of myocardial infarction make it difficult to evaluate the claims of investigators who champion a specific form of therapy.

Rest, with necessary drugs to enable the patient to rest, is the first principle in the treatment of acute myocardial infarction. Irvin and Burgess⁴ have adequately presented the subject of the evils of unnecessary rest. We permitted 29 of our patients to be out of bed within thirty days and 18 returned to work within ninety days. The diet should be liquid until the patient has shown that he can tolerate other foods. No effort should be made to have the bowels move for a few days. A chair commode is usually easier on the patient than a bed pan. The patient's head should usually be elevated. This should be done by placing blocks underneath the legs of the bed and not by merely cranking up the mattress.

Oxygen therapy is useful in making the patient more comfortable and in combating shock. Its use may actually preserve some of the damaged heart muscle. We used oxygen in 39 of our cases. The tent has proven to be more satisfactory in our hands than nasal oxygen.

Morphine and similar drugs are usually required to relieve distress. The dangers of excessive use of sedatives have been stressed by others.⁵ Vomiting is a frequent symptom of the disease itself. If morphine is known to produce vomiting in a particular patient, an effort should be made to get along with other drugs.

Potassium or sodium bromide is useful in combating vomiting when given in fairly large doses by mouth or by retention enema.

Papaverine was used in 26 cases. It was used intravenously, subcutaneously and by

mouth. It is probably the most useful vasodilating drug available at the present time and has a fair narcotic effect. We frequently prescribed 1½ gr. of papaverine with ½ gr. of phenobarbital by mouth every six hours, and administered morphine, pantapone, demerol, or similar drugs only as required.

Atropine was used in 37 cases. It inhibits the vasoconstrictive reflex action of the vagus. It also tends to prevent and relieve auricular and ventricular arrhythmias. Undesirable effects rarely occur if over-dosage is avoided.

Digitalis was used in 11 cases. It is usually considered contraindicated in the acute phase of myocardial infarction. Conner⁶ states that its use in acute myocardial infarction may produce ventricular fibrillation, rupture of the heart, embolic phenomena and coronary constriction. Askey and Neurath⁷ reviewed 84 cases of acute myocardial infarction complicated by auricular fibrillation with or without congestive heart failure. They were concerned with the effects of quinidine and of digitalis on the mortality rate of patients with acute myocardial infarction. They found that when both complications were present digitalis alone actually increased the mortality rate. When only auricular fibrillation was present, quinidine alone gave the best results. When both auricular fibrillation and congestive failure were present they preferred to give both quinidine and digitalis.

Quinidine was used in the management of 17 of our cases. This drug should ordinarily not be used in patients with obvious defects in the conductive mechanism of the heart. The dangers of quinidine therapy have probably been over-emphasized. It should be used when clearly indicated.

Procaine hydrochloride has proven to be a boon to anesthesiologists and surgeons in treating cardiac arrest occurring during anesthesia, and particularly during certain chest operations. Procaine has been found

4. Irvin, C., Jr., and Burgess, M., Jr.: The Abuse of Bed Rest in the Treatment of Myocardial Infarction, *New England J. Med.* 243: 486-489 (Sept. 28) 1950.

5. Falk, O. P. J.: Treatment of Coronary Artery Disease, *J. A. M. A.* 134: 491-495 (June 7) 1947.

6. Conner, L. A.: Conferences on Therapy: II. Treatment of Coronary Disease, *J. A. M. A.* 111: 2482-2488 (Dec. 31) 1938.

7. Askey, J. M., and Neurath, O.: The Treatment of Auricular Fibrillation Occurring with Myocardial Infarction, *Am. Heart J.* 30: 253-259, 1945.

to be useful when administered intravenously for certain types of urticaria and especially to urticaria due to penicillin sensitivity. Procaine amide hydrochloride (Pro-nestyl)⁸ has recently been found to be safe and effective in treating ventricular tachycardia. It may prove to be useful in other types of arrhythmias. It does not tend to cause a drop in blood pressure as does procaine hydrochloride.

Xanthine derivatives are used both for their vasodilating effect and for their diuretic effect. They also inhibit prothrombin activity.⁹ We used aminophylline in 32 cases. Relatively small doses were usually given by mouth or by rectal suppository intended principally for the vasodilating effect. The somewhat larger doses required for satisfactory diuresis were considered unsafe.

Diuretics should be used when pulmonary congestion is suspected. They are contraindicated when the patient is already dehydrated because dehydration tends to increase thrombosis. Mercurial diuretics were used in 13 of our cases.

The value of dicumarol in preventing embolic phenomena and thereby reducing the mortality rate during the acute phase of myocardial infarction has been well established. It may inhibit further extension of the coronary thrombus already present and prevent the development of thrombi in other coronary arteries during the acute phase of the disease. Its use is especially indicated in the severely ill patient who requires absolute bed rest. Shock states and the presence of arrhythmias are further indications for its use. We used dicumarol in 29 cases. Patients who died within three days after dicumarol was started were not counted. The necessary close cooperation between the laboratory and the attending physician did not prove to be too difficult. We found it desirable to order the dose of dicumarol each day in the afternoon after the morning determination of the blood prothrombin level had been obtained. We usually man-

aged to omit the determination on Sundays. Bresnick et al.,¹⁰ in a recent review of 250 cases of acute myocardial infarction treated in a large general hospital, 122 with dicumarol and 128 without dicumarol, found no benefit from its use. They found it impossible to keep the blood prothrombin at satisfactory levels in patients in a large general hospital where there was a constant change of physicians and of hospital personnel.

James et al.¹¹ found vitamin K₁ oxide administered intravenously, the suggested dose being 1 gm., far superior to menadione sodium bisulfite (hykinone) and tetrasodium salt of 2-methyl-4-naphthohydroquinone diphosphoric acid ester (synkayvite) in treating dicumarol hypoprothrombinemia. Other investigators have failed to confirm the work of James et al. but all agree that the dose of vitamin K preparations which is adequate for controlling bleeding in such conditions as obstructive jaundice and hemorrhagic disease of new-born infants is wholly inadequate in controlling bleeding due to dicumarol. The tendency of dicumarol to cause bleeding is not entirely due to its effect on the blood prothrombin level.

Individual idiosyncrasies and untoward reactions to various drugs should be watched for at all times. The administration of drugs is frequently continued long after the desired effects have been attained. Intravenous medication should be avoided if other routes will suffice. When the patient suddenly expires while intravenous medication is being given, it is hard to convince oneself and even more difficult to convince the patient's relatives that the procedure did not cause death. Deaths have been reported in cardiac patients occurring during and apparently attributable to the intravenous administration of papaverine, quinidine, aminophylline, salyrgan, magnesium sulfate, and morphine. We have not had such an unfortunate experience but have been soundly frightened more than once.

8. Mark, L. C.; Berlin, I.; Kayden, H. J.; Rouenstine, E. A.; Steele, J. M., and Brodie, B. B.: The Action of Procaine Amide on Ventricular Arrhythmias, *J. Pharmacol. & Exper. Therap.* 98: 21-22, 1950.

9. Breystpraak, R. W., and Greenspan, F. S.: The Effect of Aminophylline on the Prothrombin Time, *Am. J. M. Sc.* 212: 476-478, Oct. 1946.

10. Bresnick, E.; Selverstone, L. A.; Rapoport, B.; Cheskey, K.; Hultgren, H. N., and Sise, H. S.: Experiences with Dicumarol in Acute Myocardial Infarction, *New England J. Med.* 243: 806-810 (Nov. 23) 1950.

11. James, D. F.; Bennett, I. L., Jr.; Scheinberg, P., and Butler, J. J.: Clinical Studies on Dicumarol Hypoprothrombinemia and Vitamin K Preparations, *J. A. M. A.* 83: 632-652, 1949.

The persistence of shock due to acute myocardial infarction after complete rest and oxygen therapy have been instituted is of serious import. The cautious use of blood transfusions and the use of vasopressor drugs such as neosynephrine and Wyamine in combating shock deserve further study.

Comments: We have briefly presented the clinical course and our experiences in

the management of 90 cases of acute myocardial infarction. It is difficult to evaluate statistically any particular form of therapy because of the extreme variations in the clinical manifestations of the disease. Therapy should meet the needs of the individual patient. The immediate goal is to save the patient's life. The ultimate aim is to aid him in resuming his place as a useful citizen.

THE EARLY USE OF MERCURIAL DIURETICS IN MYOCARDIAL INFARCTION

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Master et al.¹ have found the incidence of congestive failure during the acute attack of myocardial infarction to be as high as 66 per cent. Yet Starr² and his associates have shown in experimental animals that after the right ventricle is almost completely destroyed with a cautery the resultant change in venous pressure is negligible, while Smith and Roos³ were unable to produce congestive failure in dogs by either coronary ligations or widespread coronary embolism with potato starch. However, when the latter experimenters first increased blood volume by transfusion, similar cardiac damage resulted in increased venous pressure, dilatation of the heart, and other signs of acute congestive failure. Starr⁴ states that "it is evident that cardiac factors are of less importance than extra-cardiac factors" in producing congestive failure.

According to most of the present concepts^{4, 5} of congestive failure, the retention of sodium and water with increased blood volume play an important role. Whether one believes that the primary cause of con-

gestion in the case of myocardial infarction is "forward" or "backward" failure, or a combination, it is well recognized that the process leads to an increase in central blood volume—i. e., in heart, lungs, and great veins. This may tend to be beneficial when shock is the primary difficulty. Otherwise, the increased central blood volume may, as pointed out by Harrison,⁵ "tend to overcome the decline in cardiac output, but only at the expense of aggravating the congestive phenomena." Furthermore, the increased filling and distention of the heart impose an added strain at a time when it can be ill afforded, so that further myocardial damage is frequently the result (see figure 1). Therefore, with the possible exception of those who are in actual shock, it would seem desirable to interrupt this circle of events fairly early in its course.

Since the retention of sodium and water by the kidneys is a key factor in the process of congestive failure, it is only logical that the problem be attacked at this point. This is particularly true in view of the fact that the severely damaged myocardium has lost much of its ability to respond to stimuli to increase the cardiac output. Mercurial diuretics offer a safe and often effective means of combatting this situation. If the potentialities of this vicious cycle (figure 1) are kept in mind in all cases of myocardial infarction and treatment instituted early, it may often be broken up before further damage and further decrease in coronary blood flow occur. With the use of newer mercurials such as mercaptomerin (Thiomerein), and

1. Master, A. M.; Dack, S., and Jaffe, H. L.: *Am. Heart J.* 13: 330, 1937.

2. Starr, I.; Jeffers, W. A., and Meade, R. H., Jr.: *Am. Heart J.* 26: 291, 1943.

3. Smith, J. R., and Roos, A.: *Proc. Am. Soc. Clin. Invest.* 26: 1197, 1947.

4. Starr, Isaac: *Ann. Int. Med.* 30: 1, 1949.

5. Harrison, T. R.: Ch. 14, *Principles of Internal Medicine*, The Blakiston Company, Philadelphia, 1950.

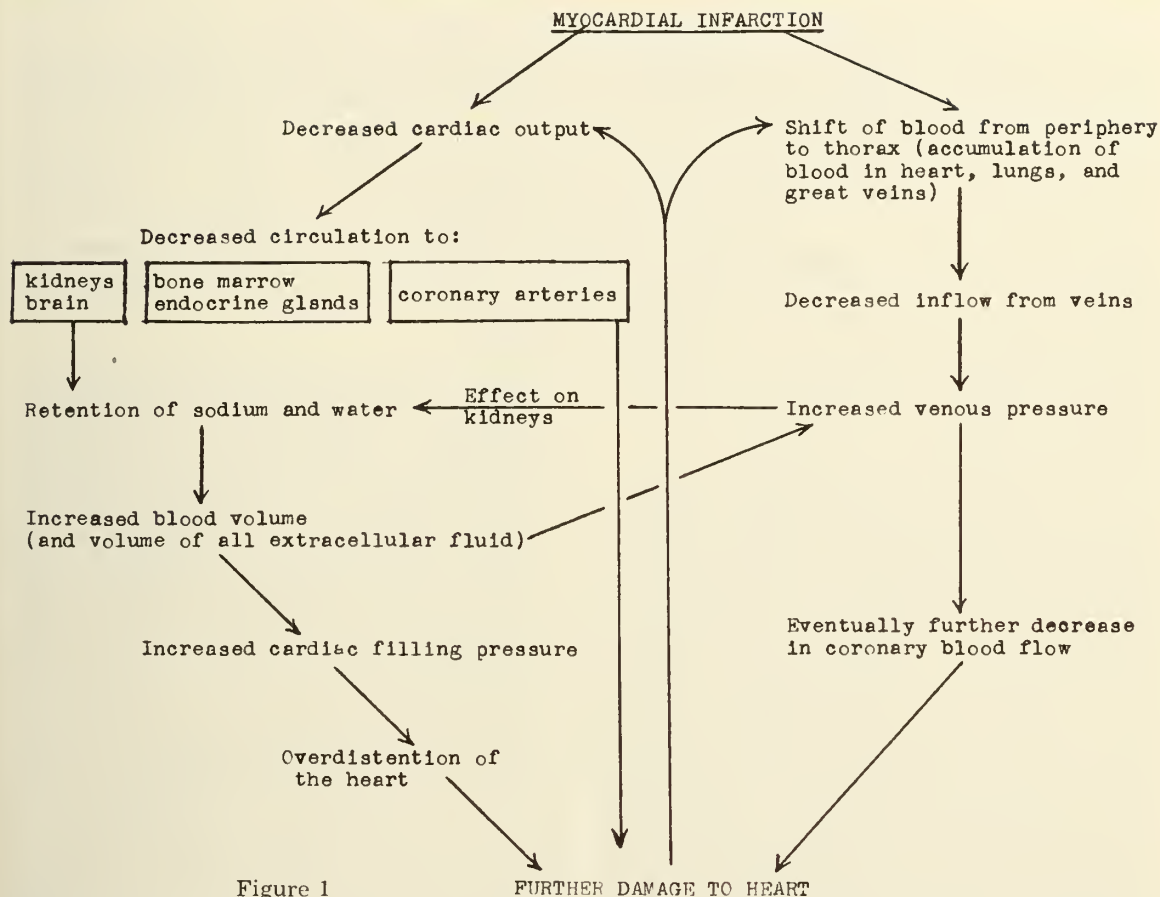


Figure 1

testing for sensitivity with small initial doses, there is little danger of a detrimental reaction and the possible benefit is considerable.

This does not apply so clearly in cases where shock and dehydration complicate the picture. In patients where shock (systolic blood pressure below 80 to 90 mm. Hg. for one hour or over)^{6, 7, 8} is also present in addition to congestive failure, we are faced with a dilemma which has been a subject for much debate. The prognosis in these patients is certainly grave no matter what treatment is used. At present it would seem better to treat the shock with vasopressor drugs first, according to the method outlined recently by Hellerstein and Brofman.⁹

6. Brofman, B. L.; Hellerstein, H. K., and Caskey, W. H.: J. Lab. & Clin. Med. 36: 802, 1950.

7. Epstein, F. H., and Relman, A. S.: New England J. Med. 241: 889, 1949.

8. Sampson, J. J., and Singer, I. M.: Am. Heart J. 38: 54, 1949.

9. Hellerstein, H. K., and Brofman, B. L.: Modern Concepts of Cardiovascular Disease 20: 104 (Aug.) 1951.

In this instance digitalization is probably a better method for treating the congestive failure, since further depletion of extracellular fluid volume in the face of shock could well be harmful. Yet even here a case might be made for the use of mercurial diuretics to reduce extracellular fluid volume as a whole while maintaining the intravascular compartment by the administration of intravenous plasma or blood. However, it is not the intention of this discussion to imply that digitalis should not be used in cases of severe congestive heart failure. The benefit from its use often far outweighs any possible harm, although, due to individual variation in sensitivity and response to digitalis, there are always certain dangers. These dangers are further increased both by the presence of an already severely damaged myocardium and by poor renal excretory function which often causes cumulative effects from relatively small doses. Furthermore it is to be expected that the effectiveness of digitalis will be greatly decreased by severe myocardial damage while the renal retention mechanism of the congestive cycle (figure

1) is still open to interruption by mercurial diuresis. In view of this we feel that, while digitalis should always be used when congestive failure does not respond to mercurial diuresis, or is sufficiently marked to demand the use of every available type of treatment, nevertheless the early use of mercurial diuresis may often prevent this stage being reached. Also some congestive failure may occur before the objective signs become evident, and even this amount may produce further damage in a heart already compromised by coronary arteriosclerosis and myocardial infarction.

METHOD OF TREATMENT

Shock usually occurs within the first 24 to 48 hours, while congestive failure does not usually become a problem until later. If shock is not present after the first 24 hours, we give a test dose of 0.5 cc. of Thiomerin subcutaneously. If there are no reactions at the end of the next 24 hours, a one cc. dose of Thiomerin is given subcutaneously in the arm. Intake-output records are kept on all patients, and a careful note is made as to whether the urine output is adequate and whether there is a diuresis. Patients are maintained on a low sodium diet, and further 1 or 2 cc. doses of Thiomerin are given for any one of the following: persistent tachycardia in the absence of shock or high fever, dyspnea or orthopnea, recurrent pain, moist rales in the lung bases, a cough not previously present, prolonged circulation time, diastolic gallop, engorged liver, elevated venous pressure, or edema. Master et al.¹ have found that a heart rate of 110 or higher during the first week of the attack usually is associated with heart failure and has been found to be an unfavorable prognostic sign. If none of the above mentioned indications for mercurials are noted, we are inclined to give one additional 1 or 2 cc. dose of Thiomerin at the end of the first week and note the amount of diuresis produced. A good diuresis is suggestive evidence that mercurials might be profitably employed further.

Many cases of myocardial infarction perspire profusely during the first day or two, and mercurial diuretics should not be given when patients are dehydrated. In addition to the clinical signs of dehydration, the presence of an oliguria which does not respond to Thiomerin is taken as a contraindication

to the use of mercurials. Similarly, sodium depletion from repeated marked diuresis must not be carried on to the extent that a low sodium syndrome is produced. Several authors^{10, 11, 12} have warned of the dangers of producing this condition by mercurial diuresis, but it is our impression that it is more likely to occur in long standing cardiacs who have been subjected to prolonged salt restriction and often repeated mercurial diuresis.

RESULTS

We have used the procedure outlined in treating our last 22 cases of acute myocardial infarction. Fifteen of these had no evidence of congestive failure when first seen, and only one patient developed frank signs of failure during the first month after the onset of the myocardial infarction. In this particular case the decompensation was due to the sudden onset of rapid auricular fibrillation, and digitalis was necessary to bring this under control.

The remaining 7 patients were already in congestive failure when first seen. However, it is interesting to note that in only one of these did symptoms of congestive failure develop within 48 hours of the apparent onset of the myocardial infarction. Six patients in this group responded to a low salt diet and mercurial diuresis alone. The seventh was a man who did not improve on mercurials and was digitalized with still no improvement. He died suddenly, 36 hours after beginning digitalis.

While this is a rather small series and does not permit valid statistical conclusions, it is our impression that in general the group of patients treated by this method have run a smoother course with fewer complications and have had a lower mortality rate. We have not noted any harmful effects attributable to this regimen.

SUMMARY

In view of the high incidence of congestive failure in myocardial infarction and the dangers of congestive failure to these patients, more attention should be directed towards possible preventive measures. On theoretical grounds the early use of mercurial diuresis is offered as a relatively safe approach

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to this problem. A method of treatment with mercaptomerin (Thiomerin) is suggested, and indications and contraindications are

discussed. In a limited series this regimen appeared to be a definite addition to our treatment of myocardial infarction.

HEART DISEASE IN PREGNANCY

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Heart disease is noted in about two per cent of all pregnant women, and is directly responsible for approximately twenty-five per cent of all maternal deaths. In order to give such patients in our clinic better care, a Prenatal Medical Complications Clinic has been organized at the Jefferson-Hillman Hospital in which prenatal cardiac cases are jointly observed by an internist and an obstetrician. It has been the experience in other large clinics that this joint observation has decreased the morbidity and the mortality very significantly. The observations in this clinic will be reported at a future date.

INCIDENCE AND ETIOLOGY

Heart disease in pregnancy is readily classified in two large groups: (1) rheumatic heart disease, 93 per cent, and (2) non-rheumatic heart disease, 7 per cent. This latter group includes (a) congenital heart disease, (b) hypertensive and arteriosclerotic heart disease, and (c) syphilitic heart disease.

MANAGEMENT OF RHEUMATIC GROUP

A patient with a definite history of rheumatic heart disease, not yet pregnant but desirous of having children, will frequently present herself to determine whether or not pregnancy should be undertaken. Decompensation represents the greatest hazard in pregnancy. Therefore, these cases that have never had evidence of decompensation and who are well compensated at the time they present themselves represent no particular risk during pregnancy; these women may be advised to become pregnant and anticipate having a family. If, however, there has been a previous history of decompensation, or if at the time of the initial examination there

is evidence of congestive heart failure, pregnancy should not be undertaken.

In the patient who presents herself for the first time already pregnant, the status of her cardiac function should be carefully evaluated. If she is well compensated, and if there is no history of previous cardiac decompensation, the pregnancy may be continued with anticipation of a good maternal and fetal result, provided that decompensation does not supervene.

A grave problem is presented by the pregnant woman who presents herself for the first time in a state of early or frank decompensation. If she is seen in the first trimester of her pregnancy, it is felt that the patient is best handled by recommending a therapeutic abortion, meanwhile giving her appropriate medical therapy for the cardiac condition.

In those cases which develop frank decompensation after the first trimester, the treatment of choice is to institute appropriate medical therapy and to carry through with the pregnancy. Under careful medical management, the majority of these cases will do fairly well. In no case should premature termination of the pregnancy be recommended because of cardiac decompensation in a patient who is beyond the fifth lunar month of her pregnancy.

It must be emphasized that parity is no protection against the rigors of pregnancy in the cardiac patient. A decompensated patient should be considered a poor risk, even though she has had multiple uneventful pregnancies previously.

MANAGEMENT OF DECOMPENSATION

In the pregnant cardiac who is decompensated, digitalization is the first and most necessary treatment. This should include a full digitalizing schedule, followed by adequate maintenance dosage.

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A normal prenatal diet should be prescribed, but salt should be restricted. In cases which show fairly severe edema, it may be necessary to use a cation exchange resin (such as Natrinil) in a dosage of one or two heaping tablespoonsful four times daily.

Edema and pulmonary congestion are controlled by mercurial diuretics given intramuscularly once or twice weekly. The need for mercurials is determined by weight gain, pedal edema, and rales in the lung bases.

It is emphasized that if the cardiac pregnant patient develops a sore throat or a respiratory infection, then bed rest during the febrile period is definitely indicated. It is also recommended that the patient receive either penicillin or one of the other antibiotics, and these should be continued for at least three days after the temperature becomes normal. An acute exacerbation of rheumatic fever, as well as the onset of subacute bacterial endocarditis, is more prone to develop during a period of respiratory infection; utmost care should be provided and the greatest prophylaxis utilized during such periods.

MANAGEMENT DURING DELIVERY

The cardiac patient withstands labor and delivery surprisingly well. It is extremely rare for a patient to show signs of decompensation for the first time during her labor or delivery. All such patients should be delivered vaginally, unless there is a purely obstetric indication for abdominal delivery. Cesarean section should under no circumstances be done solely because of cardiac disease.

The cardiac patient should be allowed to go to term and go into labor spontaneously. Ample sedation should be given during the labor, avoiding barbiturates, scopolamine, and other drugs which tend to cause restlessness and excitement. A prolonged second stage of labor should not be permitted; the patient should be delivered shortly after full dilatation of the cervix is reached unless steady progress is being made. Most of these patients should be delivered with the aid of low forceps and episiotomy.

The choice of anesthesia will depend to a certain extent on the skill and experience of the attending anesthetist. In the average case ether, together with oxygen, is rec-

ommended. Nitrous oxide should be avoided because of the danger of anoxia, and cyclopropane should not be used because of the possibility of cardiac arrhythmias. Regional block will prove satisfactory in many cases, but these patients should be guarded most carefully against the development of hypotension.

During the labor and the first five days of the puerperium, the patient should receive penicillin therapy. This offers some protection against the development of subacute bacterial endocarditis, which may have its beginning during labor or the puerperium. An occasional patient will show a marked deterioration of her cardiac status within the first few days after delivery. This should be anticipated and if it occurs should be combatted by vigorous medical therapy.

NON-RHEUMATIC GROUP

The treatment of the non-rheumatic group is similar to the rheumatic group. Arteriosclerotic and hypertensive heart disease will occur more frequently in a slightly older age group and may therefore be associated with the manifestations of the late toxemias of pregnancy. The management and advice regarding the non-pregnant as well as the pregnant closely parallel the advice given to the rheumatic. Cases of decompensation will be handled in a similar manner to that suggested for the rheumatic group. Cesarean section has been recommended for delivery of patients with coarctation of the aorta, because with labor there is danger of rupture of the coarctation, as well as the possibility of cerebral hemorrhage.

REPORT OF CASE

A case is reported which illustrates some of the problems mentioned above. J. L. H., A73186. A 14-year old colored female, primigravida, was first seen at the Bessemer Health Center on April 10, 1950 for routine prenatal examination. Past history revealed migratory arthritis of the wrists, elbows, ankles and knees associated with fever at the age of 12 years. The patient received no medical attention at the time. The last menstrual period was in November 1950. Expected date of confinement was August 20, 1951. Examination at the time of the first visit showed blood pressure of 130/40 and loud systolic and diastolic murmurs over the precordium. The pelvis was adequate. The

patient was referred to the prenatal cardiac clinic where a diagnosis of rheumatic heart disease with aortic insufficiency and mitral stenosis was made. At this time the patient was in mild decompensation as evidenced by basal rales and moderate edema of the legs. Electrocardiogram was reported as borderline, consistent with myocardial damage together with left ventricular enlargement. Fluoroscopy of the chest revealed clear lung fields with moderate enlargement of the left ventricle and minimal enlargement of the left auricle. The aorta was normal. Patient was digitalized slowly and given mercurhydrin intramuscularly.

The patient compensated on therapy and did well until July 17, 1951, at which time she was admitted to the hospital following an episode of syncope, the etiology of which was not determined. She responded well to bed rest and was discharged for outpatient follow-up.

At the first clinic visit following hospitalization, patient had gained eight pounds and had a mild elevation in blood pressure. At this time she was put on Natrinil, a cation exchange resin, two tablespoonsful three times daily but failed to show any improvement at the next visit. Patient was readmitted to the hospital on August 9, 1951, two weeks before term, for control of preeclampsia and to await spontaneous onset of labor. During this admission clinic therapy was continued and the patient lost 19 pounds. The blood pressure dropped from 160/40 to 130/40.

Patient went into labor spontaneously on August 24, 1951, and delivered a 6 lb., 14 oz. infant with low forceps under caudal analgesia, after a labor of 12 hours, 25 min. The delivery and immediate postpartum course were uneventful. A Pomeroy type tubal ligation was done 36 hours postpartum under local anesthesia. Recovery was uneventful.

SUMMARY

1. Cardiac disease occurs in two per cent of all prenatal cases.

2. Non-complicated rheumatic valvular disease is not a contraindication for pregnancy. The course is normal and delivery by the vaginal route is possible and generally uneventful.

3. The presence of congestive cardiac failure is a contraindication to pregnancy in cases of rheumatic heart disease. In the first trimester, therapeutic abortion is indicated. Beyond the first trimester, the congestive cardiac failure should be treated, and delivery by vaginal route is the treatment of choice.

4. Cardiac management should include digitalis, mercurials, low-salt diet, cation exchange resins and antibiotic therapy.

5. The non-rheumatic group, unless complicated by toxemias of pregnancy, is handled in a manner similar to the rheumatic group.

6. The only non-obstetric indication for cesarean section is coarctation of the aorta.

Closed Head Injuries—Treatment of acute head injury is usually started by treatment of the initial shock. Infusion of glucose solution, blood plasma and whole blood, administration of oxygen and stimulants and the application of external heat must be carried out irrespective of the head injury. After the initial phase of shock has subsided, and the type and extent of damage to the nervous system has been determined, more definitive treatment can be instituted.

One of the most troublesome symptoms is restlessness. That which is caused by cortical irritation alone is not common except in alcoholic patients, and usually there is good response to paraldehyde given by mouth or rectally. Some physicians give the drug intramuscularly and a few intravenously without apparent deleterious effects. In most instances, restlessness is due to pain and discomfort. This can be combated by adequate splinting of fractures, by comfortable positions in bed, by catheterization if the bladder is over-distended, and by giving appropriate analgesics. Codeine is probably the most helpful drug for the control of pain. Demerol in doses not to exceed 100 mg. hypodermically, every three or four hours, may be used. Morphine, Pantopon and Dilaudid are not usually desirable because of the depressing effect of these drugs on the respiratory mechanism, although they are usually tolerated well by persons with minor head injuries.

The routine use of chemotherapy and antibiotics is not justifiable. If the patient obviously has infection of the sinuses or ears and there has been a basal skull fracture with bleeding into the infected area, the necessity for antibiotics is apparent.—*Lawrence, California Med., October 1951.*

ACUTE BENIGN NON-SPECIFIC PERICARDITIS

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Idiopathic pericarditis has been mentioned in the literature for a number of years. Carmichael et al. reported that idiopathic pericarditis was described by Hodges in Boston 96 years ago. In 1906 Morrison reported a case of pericarditis of a benign nature in a child with acute follicular tonsillitis. Comer in 1927 reported six cases of idiopathic pericarditis of a benign nature. It remained, however, for Burchell and Barnes to review the syndrome in 1942. These men presented 14 cases of acute pericarditis that simulated coronary occlusion, but with no demonstrable etiology. In each case the course was benign. Since then, numerous case reports have appeared in the literature, and acute benign non-specific pericarditis has become recognized as a clinical entity with certain diagnostic criteria. Multiple designations for this syndrome include serofibrinous pericarditis of undetermined cause, idiopathic pericarditis, cryptic pericarditis and others.

The purpose of this paper is to review briefly the current literature on the subject; to present two rather typical case histories; to review the findings in 12 cases noted at this institution during the past two and one-half years; and to reemphasize the features that differentiate this disease from acute myocardial infarction.

ETIOLOGIC CONSIDERATIONS

The etiology of acute benign pericarditis is obscure; hence, the term non-specific. It is a pericarditis not associated with rheumatic fever, tuberculosis, septicemia, pneumonia, disseminated lupus, uremia or other demonstrable cause.

In a large percentage of cases an antecedent history of an upper respiratory infection occurring from several days to several weeks prior to the onset of the pericarditis can be obtained. The acute pericarditis is probably a sequel to this infection.

Wolff considers the disease to be inflammatory, infectious and probably of a viral

origin. Levy and Patterson feel that the etiologic agent is a virus or that the pericarditis represents an allergic reaction to previous bacterial infection. According to Carmichael et al. the prevailing hypotheses as to etiology include: virus infection of the pericardium, tuberculous pericarditis, pericardial response to unknown toxins, and an allergic reaction of the pericardium. However, the clinical and laboratory data support none of these hypotheses, and the problem of etiology remains unsolved.

In our group of cases a multitude of tests, including blood cultures, cultures of aspirated pleural fluid, and the heterophil antibody test, have been negative.

CLINICAL FEATURES

Although pericarditis does frequently occur in the so-called "coronary age group," generally speaking the average age of the patient with pericarditis is considerably lower than the average of the patient with coronary occlusion. In our series the average age was 36 years.

It occurs more frequently among males. The ratio of 11:1 in this series is uncommonly high, but other writers report a sex ratio of 2.3:1 to 4:1, with the highest incidence among males.

As stated previously, in an appreciable number of cases an antecedent history of an upper respiratory infection can be obtained. This may range from a mild coryza to a severe bronchitis and may have occurred from several days to several weeks prior to the onset of the pericarditis.

Pain is the most common complaint of patients with pericarditis. The onset may be gradual or abrupt. The pain is generally substernal, yet may encompass the entire precordium and may radiate into the neck, shoulders, arms and epigastrium. Generally speaking it is not so severe as that of myocardial infarction, but it may, in some instances, require heavy sedation for relief. Characteristically, the pain is intermittent and lancinating, and is aggravated by deep

respiration, rotation of the trunk or other motion of the body. Relief may occasionally be obtained by leaning forward. Dyspnea, shock and excessive perspiration have been observed, although they are infrequent. The pain tends to recur and may last for weeks. In a few cases occasional twinges of pain have been noted for several months.

Physical examination may reveal a temperature range from normal to 105 degrees. A pericardial friction rub is usually present (noted in 11 of 12 cases of this series), and is best heard at the fourth and fifth intercostal spaces just to the left of the sternum. The rub is noted at the onset, is generally prominent when present and may persist for a long time, the length being related to

the severity of the disease. Clinically, the heart may be enlarged, but physical signs of pericardial effusion may not be evident. Physical signs of pleural and pulmonary involvement with rales, pleural friction rub and evidence of pleural effusion are often noted.

The sedimentation rate is elevated; and in 11 of 12 cases herein reported a leucocytosis was noted, in one instance as high as 28,950. This is in general agreement with the findings of others.

Electrocardiogram: The electrocardiographic changes are diagnostic of acute pericarditis and serial tracings should always be taken (see figure 1). There is ST segment elevation in one or more leads and reciprocal ST depression, as seen in myocardial in-

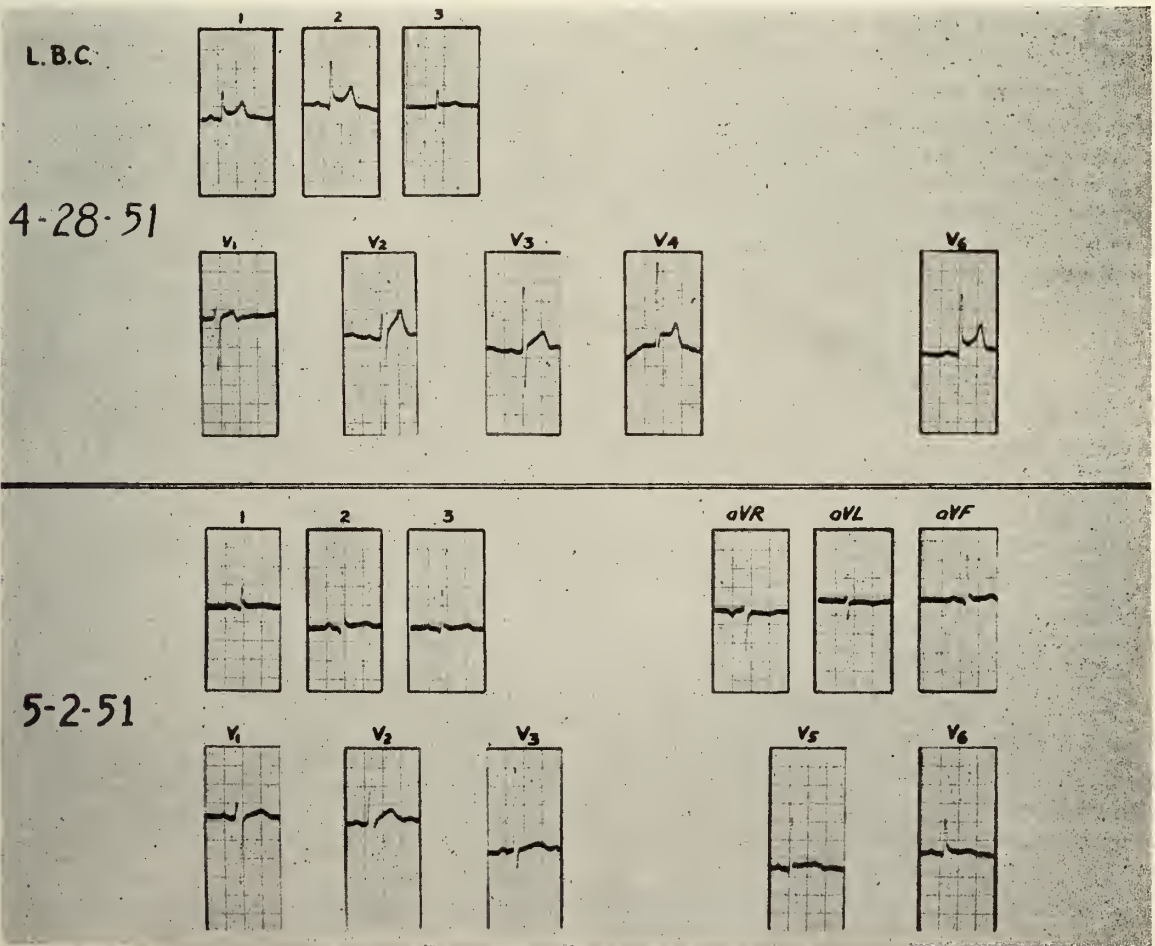


Figure 1

Acute Benign Non-Specific Pericarditis—Bridges and Porter

In tracing made April 28, 1951, note the elevated ST segment in all the standard limb leads and precordial leads V2, V3, V4, and V6. Striking changes have occurred by May 2, 1951. Notice the broadening and flattening out of all the T waves. This is particularly noticeable in lead 1 and 2 and V6. Also notice the absence of any QRS changes.

farcion, does not occur. QRS changes in form are never present, but the voltage of the QRS complex may be reduced if pericardial effusion occurs.

The T waves at the onset are tall and pointed. Later they become lower and still later are inverted. The T wave changes may fluctuate from day to day. The reason for this is obscure. T wave inversion may be present from days to months.

Levy and Patterson have reported transitory arrhythmias in three cases. These consisted of premature ventricular contractions in two cases, and in one case premature auricular contractions with a shifting pace-maker were noted.

X-rays: Chest x-rays usually demonstrate a rapid conspicuous enlargement of the heart with a water bottle configuration. Wolff considers this a diagnostic feature.

The actual size and shape of the heart shadow are not specific for pericarditis, since other conditions may produce them, but if rapid changes are noted they should be regarded as highly suspicious of pericarditis. Pleural effusion, either unilateral or bilateral, may be present.

chest was strapped, with an accentuation of chest pain. Later he was seen in the Emergency Clinic of this Hospital where codeine and aspirin were given with some relief of the pain for three to four hours. Later, the pain became unbearable and was accentuated by breathing, but not particularly affected by position. Past history was not remarkable except for a questionable history of "pus around the heart" a number of years previously.

Physical examination revealed a well developed young white male in extreme pain, almost maniacal. Blood pressure was 135/90. General physical examination was negative except that a pericardial friction rub was noted at the apex.

Laboratory Findings: Urinalysis was negative. Initial white blood count was 13,600, with 86 per cent polymorphonuclear neutrophils; two days later the white count was 10,200.

A chest x-ray revealed cardiac enlargement with a water bottle configuration. Interpretation was probable pericardial effusion.

Initial electrocardiogram revealed elevation of ST segment in all the limb leads with a high take off of ST (V3, V4, V6). A later electrocardiogram revealed a broadening and flattening of all T waves. These changes were interpreted as being consistent with an acute pericarditis.

Course and Treatment: He was treated with bed rest. Initially, the pain was quite severe, and the patient required a considerable amount of opiates for relief. Symptomatic recovery was rapid, and the patient was discharged on the seventh day to remain on absolute bed rest and to return in one week for a clinic check-up.

Follow-Up: The patient did not restrict his activity. Five days after discharge he had a recurrence of severe substernal pain. He was readmitted to the Hospital at which time physical examination revealed the patient to be in extreme pain with a loud pericardial friction rub audible over the precordium. The white blood count was 18,560. Sedimentation rate was 15 mm. (Cutter). Chest x-ray revealed a slightly larger cardiac silhouette. Electrocardiograms showed no significant change from previous tracings.

TABLE I
DIAGNOSTIC CRITERIA
(12 PATIENTS)

Average age	36 years
Sex ratio	11:1 (males predominating)
Antecedent infection	7
Precordial pain	12
Pain aggravated by motion	11
Temperature range	98.6°-103°
Pericardial rub	11
Leucocytosis	12
Leucocyte range	10,150-28,950
Elevated sedimentation rate	8 of 10 cases measured
Characteristic EKG changes	12
X-ray evidence of cardiac enlargement	10
Benign course	12
Recurrences	3
Response to chemotherapy	0

CASE REPORTS

Case 1. L. B. C., a 29 year-old white male, was admitted with a chief complaint of chest pain. The day prior to admission the patient developed a pleuritic type of pain over the substernal region with an aching in the neck and abdomen. Shortly thereafter he was seen by a private physician and his

The patient was treated with bed rest and sedation, this being considered a relapse of the acute pericarditis. He was also given chloromycetin, 500 mgm., every six hours. The pericardial rub disappeared on the eighth hospital day and the patient was discharged on the thirteenth hospital day to remain on absolute bed rest at home.

Case 2. T. P. H., a 58 year-old white male, was admitted with a chief complaint of chest pain. Present illness began the day prior to admission with dull substernal pain, aggravated by deep breathing. The pain started in the left anterior precordium and extended across the entire chest. The pain was quite severe at time of admission. Seven days prior to admission the patient had had fever with pleurisy.

Past history revealed that he had a myocardial infarction in 1949.

Physical examination revealed a blood pressure of 92/58. Temperature was normal. Patient was in no distress but was heavily sedated. General physical examination was negative, except for increased cardiac size to percussion; and a peculiar systolic clicking sound at the apex was noted.

Laboratory Data on Admission: Urinalysis was negative. The white blood count was normal. Sedimentation rate was 16 mm. (Cutler). Chest x-ray was normal. The electrocardiogram was suggestive of acute pericarditis but was technically unsatisfactory. Three days after admission the white blood count was 28,950.

Course: The pain increased. The patient became worse. Temperature rose to 101 degrees. Approximately 48 hours after admission a harsh pericardial friction rub was heard over the entire precordium. Electrocardiogram revealed marked ST segment elevation in all leads. Patient maintained a febrile course for 26 days. Chest x-ray 15 days after admission revealed considerable cardiac enlargement with pericardial and pleural effusions. Later x-rays revealed considerable clearing of these.

Because of previous infarction, the patient was treated with anticoagulants for a period of one week, but this course was abandoned because of the fear of hemorrhagic pericarditis.

Chloromycetin, 500 mgm. every six hours,

was given for a period of 12 days with no demonstrable effects.

The patient improved slowly and was discharged on the 36th hospital day to remain fairly quiet at home and return to the Medical Clinic for follow-up.

DISCUSSION

The condition most often confused with pericarditis is myocardial infarction. It is important that pericarditis be differentiated from cardiac infarction, since with pericarditis the course is benign, the prognosis is excellent, and there are no residual stigmata that may interfere with the patient's normal life.

Usually the diagnosis can be established without difficulty. It must be admitted, however, that in certain cases the differentiation between these two conditions is most troublesome and it taxes the ingenuity of even the most astute clinician. Fortunately, there is most often no need to hurry in reaching a conclusion. One does no harm if he keeps the patient comfortable at bed rest while he waits for data to accumulate that will aid him in the differential diagnosis. Of course, the patient deserves eventually to be told the precise nature of his disease; in fact he must be told so.

The reason the two diseases are sometimes confused is obvious. So many of the diagnostic features are common to both. The age of the patient, the presence of leucocytosis, an increase in the erythrocyte sedimentation rate, the degree of pain and the presence or absence of an upper respiratory infection will prove of little value because there is considerable overlapping of these abnormalities in both conditions. The following four points, however, have been very useful to us in separating the two diseases:

1. Character of the pain: In pericarditis the pain is related to breathing and changes in body position.

2. Fever curve: The temperature following an infarction of the myocardium rarely is elevated before the end of 24 hours. It then gradually climbs and rather smoothly returns to normal. In pericarditis the temperature is usually elevated initially and there may be "spikes."

3. Pericardial rub: The rub due to cardiac infarction rarely occurs within the first

36 hours, whereas in pericarditis it is frequently present at the onset.

4. Electrocardiographic changes: Figure 1 shows the classical changes of acute pericarditis. The absence of "reciprocal" ST segment changes in leads I and III and the absence of QRS changes favor pericarditis. The changes in serial tracings are the greatest single aid in the diagnosis of these two diseases.

The course in isolated cases may be severe but it is always benign and complete recovery is the rule. Signs of cardiac insufficiency or impaired function are not noted. The treatment is purely symptomatic. Many antibiotics have been tried with no effect. Taubenhaus and Brams have recently reported three cases treated with aureomycin with good response and suggest further evaluation of this therapy. We have had no clinical response in three cases treated with chloromycetin at this institution.

Brown has reported a careful follow-up of 13 patients, each for at least 18 months and six for three years. All are asymptomatic and each has a normal heart to physical examination, by x-ray and by electrocardiogram. Levy and Patterson have followed 23 cases for an average period of five and one-half years, and all studies are negative. Carmichael et al., in a long term follow-up of a large number of cases, have noted infrequent residual electrocardiographic abnormalities and pericardial calcification in one case with no evidence of impaired function. It seems certain that acute benign non-specific pericarditis is not a precursor of constrictive pericarditis.

Recurrences occur and are not infrequent. This occurred in three of 12 cases of this series.

SUMMARY

1. The diagnostic criteria of acute benign non-specific pericarditis are presented.

2. Case reports of two typical cases are presented.

3. The benign course and importance of the differentiation between acute pericarditis and myocardial infarction are emphasized.

4. The clinical features of 12 cases of acute pericarditis are summarized.

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Hypertrophic Pyloric Stenosis—Seventy-two infants had pyloromyotomies performed at the Children's Hospital, St. Paul, during the past six years.

The majority (87 per cent) of the infants treated were males.

Pylorospasm is one of the most difficult differential diagnoses to make in this disease. One of the infants in this group was operated upon before the diagnosis was made.

Preoperative and postoperative fluid therapy is the most important therapeutic consideration in reducing the mortality of this disease. The value of potassium in the fluid therapy of this condition was clinically evident.

The roentgen examination is not used frequently enough in the diagnosis of congenital hypertrophic pyloric stenosis.

Complications are not infrequent. The surgical complications encountered were: perforation of the duodenum, partial separation of the abdominal wound, hemorrhage, and one case requiring reoperation. The medical complications were pneumonia, otitis media, diarrhea, and chaliasia of the esophagus.

Careful diagnosis and operation before severe dehydration are necessary if we are to improve the mortality of this disease.—*Flanagan, Minnesota Med., Oct. '51.*

PATENT DUCTUS ARTERIOSUS

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and
CHAS. J. DONALD, M. D.
Birmingham, Alabama

Tremendous strides made in blood vascular and cardiac surgery, both in the congenital and acquired types, has made it imperative that all physicians become more familiar with and more accurate in the diagnosis of these lesions.

In this paper only one form of congenital malformation of the heart will be described, the patent ductus arteriosus. This is the first type of congenital malformation which was treated by surgery. Dr. Robert E. Gross cured the condition by surgery about 1937. In its typical form it is very easy to diagnose. The ductus arteriosus is a normal and necessary part of the fetal circulation. It originates in the bifurcation of the pulmonary artery and enters the aorta just distal to the left subclavian artery. During fetal life the lungs need very little blood so that most of the blood pumped into the pulmonary artery goes directly to the ductus back to the systemic circulation. After birth, when the lungs are open and more blood is necessary, the pressure becomes about equal in the pulmonary artery and the aorta; therefore, the ductus becomes closed functionally, but as a rule the ductus does not become completely closed anatomically until about the fourth month of life. If, for some reason, the ductus fails to close, as the child grows older the systemic pressure becomes greater so that there is a back flow of blood from the aorta to the pulmonary arteries and eventually a continuous murmur develops. Sometimes this does not occur for several months, sometimes for several years. In fact, it is not unusual, when one is following a child from birth through the first few years of life, to find no murmur at all on the initial examination. When the baby comes back for the five or six month check-up, a systolic murmur may be heard. Later on, when the child is one, two or three years old, a continuous murmur may be heard. Of course, the actual incapacity and symptoms shown by the patient will vary depending upon the size of the ductus. The amount of blood shunted from the aorta back into the ductus varies from twenty to

as high as seventy per cent of the total volume of blood pumped from the left ventricle.

For some unknown reason, patent ductus arteriosus occurs more frequently in girls than in boys. In our small series there were fourteen girls and nine boys.

Clinical Findings: If the patent ductus is very large the child is apt to suffer with dyspnea and palpitation; also, stunting of growth occurs when the ductus is very large and the volume of blood being shunted back into the pulmonic circulation is of considerable size. Where patent ductus is the only anomaly, the child will not be cyanotic and will not have clubbing of the fingers and toes. If cyanosis is present, some other anomaly must also be present. Occasionally a child with a patent ductus arteriosus will show hoarseness or loss of voice due to pressure of the large pulmonary artery against the recurrent laryngeal nerve.

The usual physical findings in a patent ductus arteriosus are as follows: At the second left interspace a continuous murmur, sometimes called a "machinery murmur" can be heard; also, a definite thrill can be palpated in this same area. The continuous murmur is only heard in a small circumscribed area, although the systolic component of this murmur may be heard in other areas and may be transmitted to the axilla and up the neck but the diastolic component is not heard except in this pulmonic area. Some men confuse a rough, harsh murmur as a "machinery murmur." We mean, when we speak of "machinery murmur," a continuous murmur that lasts throughout the entire systole and diastole. A patent ductus arteriosus places a constant load upon the heart, and in the majority of cases where the ductus is of large size the heart will become enlarged and in some cases greatly enlarged. Several of our cases were in heart failure at the time of surgery. The blood pressure in most instances will show a slightly elevated systolic with a very low diastolic pressure, causing a wide pulse

pressure. Following exercise, sometimes the diastolic pressure will drop to zero.

Much has been written concerning the contour of the heart under the fluoroscope and x-ray. We find a wide variety of shapes and sizes. The typical case, of course, shows a prominent pulmonary conus, with fairly marked hilar pulsations. In our experience, the hilar pulsations are apt to be much more prominent in cases of auricular septal defect than in cases of patent ductus arteriosus. Because the pulmonary vessels are filled with blood, hilar regions are usually well marked. In fact, sometimes the lungs appear congested in cases of large patent ductus arteriosus. One can not make a diagnosis of patent ductus arteriosus on x-ray findings alone. The electrocardiogram is of very little help in diagnosing the disease although it might be of help in ruling out other conditions. As a rule it shows normal findings and occasionally shows a left axis deviation.

Differential Diagnosis: A venous hum, common to childhood, might possibly be confused with a murmur of patent ductus arteriosus. However, the venous hums are usually more intense in the erect position, they are usually also heard both to right and to the left of the sternum and into the neck, and they will vary greatly in intensity if the head is moved from side to side. In patent ductus arteriosus the continuous murmur is always in the second left interspace and can be heard much better with the patient in a recumbent position.

Severe anemia in childhood might give rise to both systolic and diastolic murmurs, so this should always be kept in mind in a case of very severe anemia. We have had one case of sickle cell anemia which had a murmur very much like a patent ductus arteriosus, but as soon as the blood was built up in this child the murmur disappeared.

In cases of rheumatic fever in which the aortic and mitral valves are involved you might get both a systolic and diastolic murmur. However, in these cases the systolic murmur is much louder at the apex of the heart and is transmitted to the axilla. The diastolic murmur is maximal over the base of the heart and not along the left sternal border. In the patent ductus arteriosus both the systolic and diastolic components of the

murmur are much more distinct in the second left interspace and the thrill is of maximal intensity in this area. The history of the case and a sedimentation rate would help to rule out rheumatic fever, although it is certainly possible to have patent ductus arteriosus complicated by rheumatic fever.

Auricular septal defect is sometimes confused with patent ductus arteriosus. In auricular septal defect there is only a systolic murmur and, as a rule, the murmur is heard best in the third or fourth interspace rather than in the second interspace.

It is possible that an infant might be born with congenital anomalies of the aortic and pulmonary valves causing insufficiency and a continuous murmur. If a continuous murmur is heard in a very young infant it is not a patent ductus arteriosus. As mentioned previously, a continuous murmur of a patent ductus arteriosus does not develop in an infant until it is several months old and sometimes several years because the aortic pressure must be greater than the pulmonic pressure.

Complications of Patent Ductus Arteriosus: The most usual complication of patent ductus arteriosus is subacute bacterial endocarditis. Bacteria are most apt to lodge and grow where there is an abnormal current of blood. In the patent ductus arteriosus this point is usually on the pulmonary side of the ductus. Another complication of the patent ductus is a greatly enlarged heart with gradual heart failure.

Treatment of patent ductus arteriosus, we feel, is entirely surgical. We believe that the presence of a patent ductus arteriosus is sufficient reason to have surgical closure of the ductus, as it may prolong the child's life and prevent complications. Certainly if there are such symptoms as stunting of growth, a great cardiac enlargement, very low diastolic pressure or such complications as rheumatic fever or bacterial endocarditis, surgery is definitely indicated. A low diastolic pressure is of distinct disadvantage to the coronary circulation and may lead to heart failure in later life if the diastolic pressure remains very low. If rheumatic heart disease is present, certainly it should be treated and then the ductus closed at a time when the rheumatic infection is inactive. However, in the case of subacute bac-

terial endocarditis, in the presence of a patent ductus arteriosus surgery should be done at once, along with other treatment.

Contraindications to Surgery: If the child has cyanosis and clubbing of fingers and toes, even though a patent ductus is present, an attempt to close the ductus should not be done as in these cases the ductus remaining patent is necessary to life because other anomalies are present. In very early infancy the diagnosis of a patent ductus is questionable and we feel that the child should be at least three or four years old before a definite surgical intervention should be made unless the infant is suffering from a severe cardiac embarrassment or should have a positive blood culture of streptococcus viridans; in which case, if we were reasonably certain that a ductus exists an oper-

ation should be performed. It is always necessary to make a thorough study of a child before subjecting to surgery. This should include sedimentation test, blood culture, and a complete and thorough physical check-up from every angle. X-ray and fluoroscopic studies should be done. It would be exceedingly rare, but occasionally there might be a patent ductus present in conjunction with a right aortic arch. In this case the continuous murmur would be to the right of the sternum instead of to the left, and certainly the surgeon should know which side of the chest to enter. Most of the cases in our series are very typical and easy to diagnose. We were fortunate in having no deaths in our series and no very serious postoperative complications. A few of the cases deserve special mention.

Initials and Case Number	Age in Years	Sex	Race	Age Murmur Discovered	Heart Enlarged	Blood Pressure Before Operation	Blood Pressure After Operation	Other Abnormalities	Postoperative Complications	Ducts Ligated or Divided	Date of Surgery	No. days in Hospital Postoperatively
M. H. (14324*)	19	F	W	?	2 plus	122 60	150 100	O	Laryngeal edema Tracheotomy	D	8-18-1947	11
G. R. T. (68134*)	5	M	W	6 mos.	4 plus	120 50	112 92	O	O	D	4- 5-1948	14
J. A. C. (77069)	5	F	W	2 mos.	2 plus	110 74	?	Stunted	O	L	7-21-1948	10
S. J. G. (21860)	5	F	W	?	2 plus	108 50	138 110	O	O	L	9-12-1948	13
B. Y. (39667)	3	F	W	11 mos.	2 plus	132 90	102 80	Stunted	O	L	10- 1-1948	9
S. M. (22709)	4	F	W	2 yrs.	1 plus	86 40	?	Stunted	O	L	3- 2-1949	9
J. W. (23224)	9	F	W	At birth	4 plus	118 70	?	Stunted chest deformity	Hydro-hemothorax	L	6-21-1949	9
R. B. B. (23343*)	11	M	W	18 mos.	4 plus	125 60	136 108	O	Hemorrhage during surgery	L	7-16-1949	12
A. O. D. (20035)	4	F	W	2 yrs.	2 plus	120 54	128 96	Three lobes left lung	Hydrothorax	L	9-30-1949	7
H. L. L. (A 9955)	7	M	W	18 mos.	2 plus	140 60	118 74	Coarctation of aorta	O	D	2-13-1950	11
S. R. (B-21688)	5	F	W	4 mos.	1 plus	110 0	120 80	Stunted	O	L	4-28-1950	8
B. G. C. (49238-C)	3	F	W	At birth	2 plus	90 50	118 70	O	O	L	7-11-1950	8
J. W. (B-25274)	4	M	W	2 mos.	1 plus	120 80	150 90	O	O	L	9-18-1950	7
B. G. (52555-C)	3	F	W	2 yrs.	1 plus	88 54	100 70	O	Atelectasis	L	8-18-1950	12
S. H. (A-57404*)	14	F	W	2 yrs.	2 plus	130 30	130 70	Subacute bacterial endocarditis	O	L	9- 2-1950	23
J. W. S. (21168*)	9	M	W	21 mos.	2 plus	118 70	128 98	O	Hydro-hemothorax Emphysema	D	9- 2-1950	9
R. L. W. (25404)	9	M	W	?	1 plus	110 50	130 110	Deaf mutism Microcephaly	Hemorrhage Shock, B.P. 30 0	L	2- 8-1951	9
R. B. (B-29112)	12	M	W	11 mos.	2 plus	100 40	160 100	O	O	L	2-22-1951	7
L. J. H. (A-55187)	3	M	W	9 mos.	1 plus	100 50	24 96	Stunted	O	L	5-25-1951	7
G. H. B. (B-32023)	7	M	W	7 yrs.	2 plus	92 40	120 64	Stunted	O	L	6-19-1951	8
L. E. (A-30896)	6	F	C	2 yrs.	2 plus	128 0	120 80	Stunted	O	L	6-26-1951	10
R. B. (B-22516)	6	F	W	?	1 plus	90 20	110 80	O	O	L	7- 5-1951	7
B. K. (23842)	9	F	W	2 mos.	1 plus	122 60	150 100	O	O	L	8-22-1951	7

Case No. 23343—R. B. B., 11 year old white male. His murmur had been heard since the age of 15 months. This child had been treated more or less as a semi-invalid all of

his life, had been dyspneic and suffered some with palpation, and did not run and play vigorous games as a normal boy should. His blood pressure was 125/60. Following

exercise the diastolic pressure would drop to zero. At times his pediatrician had heard a continuous murmur, as had another pediatrician. However, when the child was brought to the hospital with the idea of operating, two cardiologists examined this child and did not hear a continuous murmur. Due to the tremendous size of the heart and the tremendous conus, we were more inclined to feel that the child had pulmonary insufficiency and possibly an auricular septal defect. Because of this wide pulse pressure and because of the fact that a continuous murmur had at times been heard, after talking it over with the parents, it was decided to do an exploratory operation. At this operation the surgeon did not feel a thrill and was about to give up and back out when the pediatrician who had originally referred the case came to the operating room and said "let's see the ductus"; and insisted that the surgeon explore a little further, which he did, and to his amazement found one of the largest that he had encountered. This ductus was closed, the child made an uneventful recovery, and in three

months time he was running and playing and living the life of a normal boy. (See x-ray of this child.)

Case No. 14324—M. H., white female, 19 years of age. The first case done. This young lady could not walk up a flight of steps; she could walk a short distance only before becoming very dyspneic and having to rest. Blood pressure before operation was 122/60. Immediately following surgery the pressure was 150/100. She also developed laryngeal edema which necessitated a tracheotomy, she was in heart failure and had to be digitalized. However, in a few months following surgery this young lady was actually playing basketball, skating, dancing and enjoying life.

Case No. 68134—E. F. P., 5 year old white male. This murmur had been noticed at the age of 6 months. At the time of surgery the child had a tremendous heart, the spleen and liver were enlarged, and he was in mild heart failure. His blood pressure was 120/50 prior to operation. Immediately following surgery the blood pressure was 112

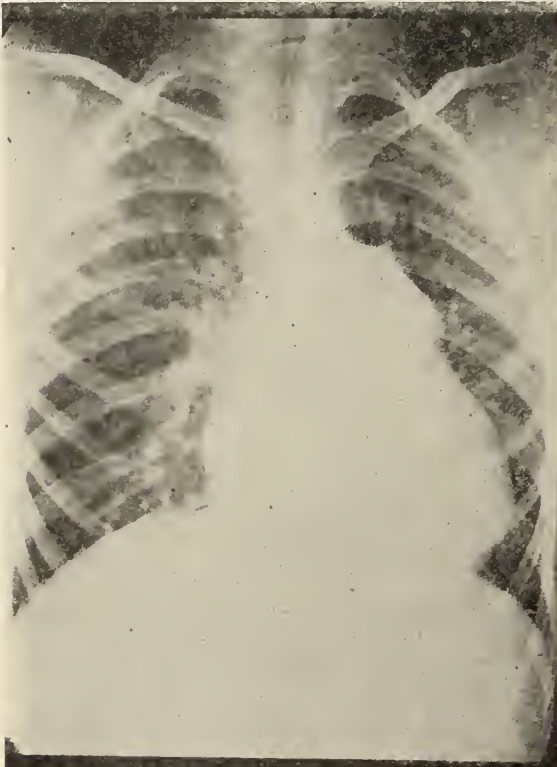


Fig. 1—Case Number 23343: R. B. B.—Film made preoperatively. Very large heart, prominent pulmonary conus and very congested hilar regions.

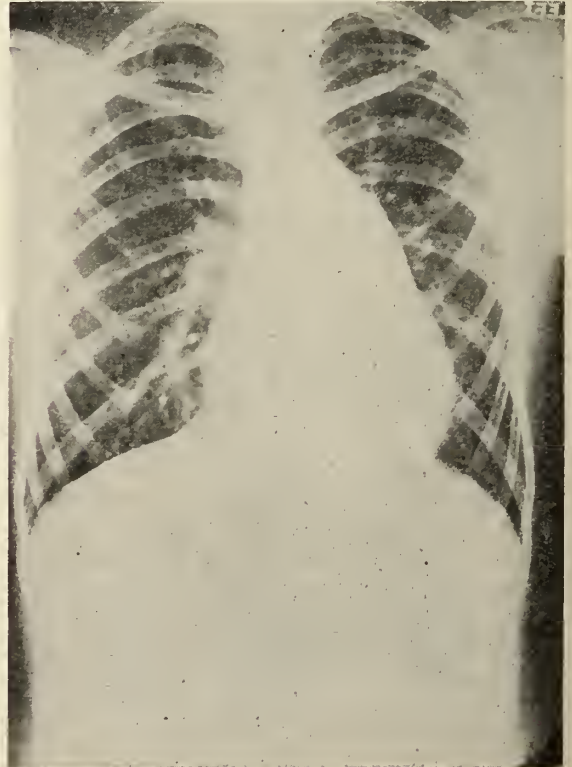


Fig. 2—Case Number 23343: R. B. B.—Film made one year postoperatively. The heart is definitely smaller, conus less prominent, and lungs less congested.

systolic and 92 diastolic. He made an uneventful recovery, gained rapidly in weight, and is now a normal, strong boy, who enjoys all the usual games of childhood.

Case No. 25404—R. L. W., a white male, age 9 years. This child was interesting because of the fact that he had several other anomalies. He was a deaf mute and also microcephalic, had microcornea. His blood pressure prior to surgery was 110/50. Immediately following surgery the pressure was 130/110. He developed some hemorrhage in his chest, postoperatively, and the blood pressure dropped to 30. Fortunately he recovered, and remained in the hospital only 9 days, postoperative. Electrocardiogram in this case showed left axis deviation.

Case No. 21168—J. W. S., a white male, age 9. This child had been in the hospital four months previous to the date of surgery with cardiac failure and possibly subacute bacterial endocarditis. The blood cultures made at this admission were negative. However, the child had received considerable penicillin before being admitted to the hospital. Just prior to operation, his pressure was 118/70. Immediately postoperative, his pressure was 128/98. His postoperative complications were some fluid in the chest and some emphysema. However, he remained only 9 days and made an uneventful recovery.

Case No. 57404—S. H., white female, age 14. Heart murmur had been noticed first at the age of 2½ years. The patient was extremely thin and incapacitated. She had been treated for subacute bacterial endocarditis. She was also very anemic. She had had large doses of penicillin and blood transfusions for three weeks prior to the date of surgery. Pressure before surgery was 130/30. Immediately following surgery the pressure was 130/70. She made a most remarkable recovery and gained 40 pounds in one year.

In the two older children, the 14 year old girl and the 19 year old girl, evidence of arteriosclerosis had already developed, the vessels were brittle and friable, and much harder to handle than in the younger children. We certainly feel that patent ductus arteriosus should be treated surgically at a fairly early age as the older a person gets the more difficult and dangerous becomes

the surgery. We feel that in the young age group, in the hands of a skilled surgeon and skilled anesthesiologist, surgical treatment of patent ductus arteriosus is not a dangerous procedure, and although it is a major operation it is a fairly safe one.

THE SURGICAL TREATMENT FOR PATENT DUCTUS ARTERIOSUS

In recent years great strides have been made in the field of thoracic surgery. These improvements have been not only in surgical technique but also in the field of anesthesiology. It is this last special field of surgery that enables us to invade the chest today with no more fear than was formerly had for abdominal surgery. The mortality for occlusion of patent ductus arteriosus is consistently around one per cent throughout the country. Because of this it is our feeling that the indication for the operation for a patent ductus is merely the presence of such a condition. The optimum time for this surgery is between the ages of four and twelve. Operations done before the age of four are indicated where there is marked stunting of the growth of the child or where marked cardiac enlargement has become apparent. One other indication for surgery before the age of four would be the presence of subacute bacterial endocarditis. The risk of surgery is definitely increased when the patient becomes over twenty years of age. We have found that these patients will have sclerotic changes in the ductus making it much more friable and there is also some apparent shortening of the ductus.

Operations on the ductus arteriosus may be performed by either an anterior incision or a posterolateral incision. While the authors have employed both of these incisions it is our preference at the present time to use a posterolateral incision and enter the chest through the 5th interspace. The anesthesia of choice is either cyclopropane or ether or a combination of these two agents. It is important at the time of surgery always to occlude the patent ductus for a few minutes before it is permanently ligated or interrupted. If no arrhythmia or cyanosis is apparent while the ductus is occluded, then it may be permanently interrupted. In most of our cases a thrill could be felt over the ductus as soon as the chest had been opened. There was one exception to this group of thrills and that was in one patient in whom

a thrill had been felt preoperatively only on certain occasions. This patient had a changing type of murmur, an enlarged heart, and a thrill that would come and go. At operation, on this particular patient, no thrill was palpable and it was our first impression that an error in diagnosis had been made. Dr. Hughes Kennedy, who was present at the operation, asked to see the region of the ductus since the chest had already been opened up. This was exposed and a very large patent ductus arteriosus was found which was at least twelve millimeters in diameter. Even after it had been exposed and a tape passed around it no thrill was apparent, unless it was partially occluded. This case taught us always to demonstrate both by sight as well as palpation the presence or absence of the ductus at the time of surgery.

In operations on the patent ductus the recurrent laryngeal nerve acts as a guide to the ductus and is a structure that should be avoided at all times. Even slight trauma to it may be a factor in the production of laryngeal edema necessitating a tracheotomy. In operations on the patent ductus we free it up well both anteriorly and posteriorly so that a good segment of the pulmonary artery and the aorta is exposed. Care must be taken in dissecting the ductus posteriorly as it is often quite adherent to the left main bronchus. The ductus may be permanently occluded by two methods. First, it may be divided and each of the cut ends closed over with a continuous suture, using arterial silk. The second method is the quadruple ligation technique that was originated by Dr. Alfred Blalock at Johns Hopkins. This consists of the first suture being taken through the adventitia well up on the aortic side of the ductus. A second similar suture is placed through the adventitia well up on the pulmonic side of the ductus. These sutures are tied and are usually twelve to fifteen millimeters apart. Following this, a stick tie of silk is placed directly through the ductus and tied on either side. A fourth tie is then placed about the ductus itself. Each method has many advocates for its particular use. We have used both methods but favor the quadruple ligation of the ductus. The reason that we favor it is because it is a safer procedure. At Johns Hopkins, where this method is used, there

has never been an authentic case of a recurrence of a patent ductus that has been treated by this method.

As a general rule we have found that when the ductus is occluded that the cardiac rate will slow down by approximately 25 to 30 per cent of its former rate. Generally, the blood pressure becomes higher with the occlusion of the ductus. This increased blood pressure may take from one to twelve weeks to come back to normal.

The complications that we have had following surgery on the patent ductus arteriosus have been pulmonary atelectasis in one case and laryngeal edema, necessitating a tracheotomy, in one. This patient had the recurrent laryngeal nerve pinched very lightly with forceps at the time of surgery. One other complication noted was bleeding from the skin edge in one patient, necessitating an additional suture the following morning. It has been our policy to insert a mushroom catheter in the lower portion of the pleural cavity for an underwater drainage in all cases. This usually makes a thoracentesis unnecessary during the convalescence.

As a general rule, children who have had a ligation of a patent ductus arteriosus have a rather dramatic increase in their activities, growth, and weight. A quick recovery has been noted in most of the cases so that they have been returned to full activity in three to four weeks time.

Note: We have quoted freely from Dr. Helen Taussig's text on congenital malformations of the heart.

Scrotal Lesions—The commonest complaint referable to the scrotum is epididymitis, which is often mistakenly called orchitis. Only by careful inspection and palpation of the scrotal contents may one differentiate between lesions of the testicle and lesions of the epididymis or vas deferens. It should be remembered that tuberculous epididymitis does not respond to ordinary therapeutic measures, therefore should be suspected in persistent or prolonged epididymitis. Genital tuberculosis is usually secondary to renal tuberculosis. Swellings of the epididymis are always inflammatory, whereas swellings of the testicle may be inflammatory or neoplastic. Testicular tumors are deceptive and demand surgical exploration in almost all instances. Survival of patients with malignant testicular tumors for more than five years is rare, regardless of the method of treatment.

Hydroceles are usually easy to detect by palpa-

tion and transillumination, but it must never be forgotten that the hydrocele may have been secondary to underlying inflammation or neoplasm. Simple aspiration or surgical extirpation are the recommended methods of treatment.—*Isaacks & Compere, Texas State J. Med., Oct. '51.*

Congenital Syphilis—Early recognition of congenital syphilis in some instances must rest on clinical grounds and an alert suspiciousness. The classical picture of a weazened infant with potbelly and the face of an old man is not difficult to recognize, but interpretation of some of the less specific signs and symptoms of congenital syphilis offers many pitfalls. Perhaps most common is to pronounce "snuffles" in a newborn who is not doing well and has a runny nose, especially when the mother has a history of syphilis. It is not surprising that many of these respond almost dramatically to penicillin which, after all, is effective against a wide range of organisms. But one must be mindful that snuffles is seldom a solitary finding, but rather is usually accompanied by an actual rhinitis which may be hemorrhagic, with erosive lesions about the mouth and other distinctive skin eruptions. Furthermore, it is not apt to be seen in the newborn nursery as its appearance is usually delayed until the infant is a few weeks old. When seen earlier, there usually is other severe involvement and a correspondingly poor prognosis.

The rash of congenital syphilis is often distinctive, but eczema, diaper dermatitis and other benign skin disorders of infancy are mistaken for it. Not even when the eruption has a copper hue and involves the palms and soles is it necessarily syphilitic. Conversely, syphilis is often passed off as chickenpox, impetigo or allergic dermatitis. Fortunately, darkfield examination can often promptly clear up a doubtful situation.

Changes in the bones and cartilages are common features of congenital lues but one must be wary of diagnoses based upon those changes alone. The x-ray appearance may be distinctive but even the experienced roentgenologist is at times hard pressed to distinguish them from nutritional or other disorders, and is relieved to have serological or other confirmation. Similarly, enlargement of the liver or spleen with or without jaundice may also suggest syphilis but should comprise only part of a total picture and needs corroborative evidence for indictment as a luetic manifestation.

Recognition of later stages of congenital syphilis is simplified when one bears in mind that the course is similar to that of acquired syphilis with the important modification that its occurrence during a period of rapid growth and development may seriously interfere with these processes. There, however, is the general pattern of a self-limiting early infection followed by an indefinite latent period with the ultimate appearance of late signs which are recognized as stigmata whether they be active lesions or scars of previous processes. Thorough acquaintance with the manifold forms of these stigmata is es-

sential as there likewise is the tendency for progressive spontaneous sero-reversal with an increasing number of late cases that escape detection by the serologic test or ordinary clinical examination.—*Porter, Delaware State M. J., Sept. '51.*

Milk Through the Ages—Milk is as old as the mammals and as old as the origin of man. It is the only food prepared specifically by nature for the young of mammals. No other food is more important.

With one notable exception, the milk of mammals is regularly consumed only by the young. Man, however, learned centuries ago that the milk of other mammals, particularly the cow, is an excellent food for persons of all ages. Accordingly, the cow was tamed and became one of the most important sources of food for the human race.

Man's dependence on the cow for food dates far back into the past. References to herdsmen are found in the earliest writings 3,500 years before Christ. From that time on down to the present, across the continents of the world and through the pages of history, the path of the cow paralleled that of man. During the course of that long association different peoples paid tribute to the cow in different ways. In a few countries man's esteem for the cow was so great that she became an object of worship.

Not all peoples utilized the cow as a source of food. Those who failed to do so, however, paid a price for their neglect. Milk drinking peoples are larger and more robust than their non-drinking neighbors. They are also healthier, more aggressive and more prosperous. There is little doubt that these characteristics are due in part to superior nutrition.

As for our own country, the cow appeared on the scene almost as soon as the white man. On his second voyage to America, Columbus brought a few cows with him and left them on the Island of San Domingo. The Pilgrims, on the other hand, brought no cows with them and it is believed that faulty nutrition contributed materially to the high death rate among their children. This experience was not ignored by later immigrants. It was also remembered by the early pioneers who settled in the West. As these settlers migrated westward in covered wagons the cow went along with them.

Today, 51 billion quarts of milk are being produced annually in this country. Almost one-fourth of this amount remains on the farm where it is consumed as milk and cream, made into butter or used for feeding calves . . .

The importance of milk in the diet of the average American makes it imperative that proper safeguards be employed to prevent the transmission of disease. Milk is not only a good food for man and animals; it is also an excellent medium for the growth of harmful bacteria. Possible sources of contamination include the cow herself and all persons engaged in handling the milk.—*Clarkson, J. M. A. Georgia, October 1951.*

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ALABAMA FIGHTS HEART DISEASE

CONTRIBUTED BY

G. O. SEGREST, M. D.
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ALABAMA HEART ASSOCIATION
MOBILE, ALABAMA

Elsewhere in this issue, you will find a statement by Dr. Louis N. Katz, President of the American Heart Association, regarding certain aspects of the national heart program of this Association. As President of Alabama Heart Association, I would like to take this occasion to tell my fellow physicians over the state something about our own local state branch of the American Heart Association.

In April of 1949, under the leadership of Dr. Roger D. Baker, Professor of Pathology at the Medical College of Alabama, the Alabama Heart Association was officially organized and incorporated under state laws as a non-profit volunteer health agency affiliated with the American Heart Association and devoted exclusively to a study of and, if possible, the control of the cardiovascular diseases. Some thirty doctors from various sections of Alabama were present at this organizational meeting in Montgomery and there decided to open membership in the Association to all who were interested in the problems of the cardiac—both lay and professional. From this group of thirty, we have now grown to a voting membership of two hundred and forty-one members—120 doctors and 121 lay men and women. By being a voting member of Alabama Heart, these members automatically become voting members of the American Heart Association and are entitled to hold office in either or both groups. Neither the State nor the National Association assesses dues, this matter being left up to the decision of local chapter groups who retain in their own treasury whatever chapter dues they may collect. Those subscribing to the two American Heart Association publications—"Circulation, the Journal of the American Heart Association" and "Modern Concepts of Cardiovascular Disease," both of which are issued monthly—may, at the time of purchasing their subscription, indicate whether or not they wish to become voting or non-voting members in the State and National Associations.

As a chartered affiliate of the American Heart Association, we, as a state group, are

bound by the general broad policies and objectives of our parent organization. These, I believe, you will find amply set forth by Dr. Katz. Our primary interest is in the development of cardiovascular research and this, as with national, is supplemented by our interests in education and community service in the cardiovascular field.

The American Heart Association so far this year has invested \$311,912 in research grants-in-aid. In addition to this sum, affiliates of American Heart have also invested heavily in research. In Alabama, out of a gross income of some \$30,000 this year, we have invested almost \$12,000 in research—\$7,500 of which has been put into cardiovascular research at our State Medical College. We are particularly proud of the fact that recently our chapters throughout the state appropriated \$5,000 for research at the College under the well-known and newly added faculty member, Dr. Richard Bing. Dr. Bing joined the Medical College staff this past September and is now engaged in setting up a cardiovascular research project in Alabama similar to the one he has directed for the past several years at Johns Hopkins. His coming here is due in no small measure to the \$5,000 appropriation made for his work by the chapters of Alabama Heart Association.

Funds of Alabama Heart Association are derived solely from donations from the public—either in the form of contributions during the annual fund raising drive in February, bequests and legacies, or from a steadily increasing source of revenue — memorial donations. All sums received, except dues and “ear-marked” funds, are subject to division as follows: 25 per cent of gross to the American Heart Association (not less than one-half of which is ear-marked for research), 20 per cent to the Alabama Heart Association, and 55 per cent for chapter use in the development of local programs. Where no active chapter exists, receipts are credited directly to the State Association subject to a 25 per cent split with National.

The first year of our Association, 1949, we raised some \$12,000. In 1950, the sum raised in the state was around \$21,000; and in the fiscal year just ended—1951—our state receipts were above \$30,000.

Most of our funds have gone into research and into education. We have brought such

prominent speakers as Dr. Paul D. White of Boston, Dr. Leonard Goldwater of Columbia University and others to speak before medical and lay groups in our state. Dr. Louis Katz spoke before our Association in September and we are planning now to bring another outstanding authority in our special field before meetings of the State Medical Association next April.

We need a far larger income than we have had to date in order to accomplish the degrees of programming in both research and education, and in community service, that ultimately we hope to achieve. We are anticipating that in the future we will be financially able to work with County Medical Societies, for instance, in the presentation before their members of programs in the cardiovascular field. We would like to be able to fill the requests in full that we receive from our County Health Departments, our schools and other groups, for educational materials and films for use with lay groups. This item in itself, on the basis of present requests, would amount to more than \$10,000 a year. Working with our doctor groups, we would like to see a better understanding by other professions of the problems of the cardiac—the nursing care necessary, the nutritional aspect, emotional balance, work classification and rehabilitation of the cardiac worker, and the cardiac housewife.

We feel that there is a great and urgent need for more and better knowledge among professionals, and by the general lay public, of rheumatic fever and rheumatic heart disease.

None of the money of the Heart Association can be used for individual patient care or medication as we are not a “direct service” agency. Our funds, we believe, can be better and more wisely spent in research into the causes of the cardiovascular diseases; increasing knowledge in the diagnosis and treatment of cardiovascular diseases by better dissemination of existing information and practices among all doctors in our state; stimulating an increase in hospital and convalescent facilities for cardiacs; arousing a greater interest and a better understanding of the cardiac among other professional groups; developing interesting educational projects for the layman to make him more aware of the need for regular medical

check-ups and lessening, to as great an extent as possible, the unreasonable fear of heart disease which, as you know, almost amounts to a disease in itself with a cardiac patient; and in the encouragement of more and better facilities for the cardiac in our state, under which classification we have already and will continue to invest money in personnel and equipment for needed work in cardiac indigent clinics and public hospitals.

In closing, we would like to remind you—the doctors of Alabama—that our Association is open to all who are interested. We are particularly desirous of having more participation in our Association and its work by surgeons, pediatricians, general practitioners and other branches of the profession, realizing that the problems of the cardiac and of cardiovascular disease touch on almost all phases of medicine. We need your support and your active participation in our affairs. We invite all who are interested to contact their local chapter group, or write to our state office, Alabama Heart Association, 1912 8th Ave. South, Birmingham, Alabama, for membership application blanks.

The articles on various phases of work in the cardiovascular field contained in this issue of the Journal are written by members of the Alabama Heart Association and we are happy to report, from information received from Dr. Cannon, that far more articles were submitted than there was room or money for printing in this issue. Future issues will benefit therefrom, we believe, and we commend the articles to you.

COMBAT TEAMS NEED MORE WEAPONS

By DR. LOUIS N. KATZ

PRESIDENT, AMERICAN HEART ASSOCIATION
CHICAGO, ILL.

Dr. Katz is former Chairman of the A. H. A. Research Committee and has been a member of the Association's Board of Directors and Assembly for many years. His headquarters is in Chicago where he is Director of Cardiovascular Research at Michael Reese Hospital and Professorial Lecturer in Physiology at the University of Chicago. Dr. Katz played an active role in the development of the Chicago Heart Association as Secretary.

My election to the high office of President of the American Heart Association is sym-

bolic of the recognition of the importance of research.

As a physician-scientist who is devoting full time to research I should like to say that we scientists are coming out of our laboratories, our ivory towers, our monastic seclusion to assume our responsibilities as citizens in the public weal; to acquaint you with our problems, our aims and our aspirations; to assure you that we welcome you in this crusade against heart disease; and to inform you that we are co-workers with you in this drive to keep hearts healthy or to heal them.

The research men fighting heart disease are of high calibre. They have selected their careers because of the compulsion afforded by the challenge to conquer the unknown. They are by instinct rugged individuals, but when need be, they can work together in teams. They are eager to increase the number of battalions, and they badly need more weapons for this fight which, in many of its aspects, vitally involves co-ordination of complex combat teams with modern equipment. All of this requires money. We scientists are the fighters against disease, you are the home front that can give us more recruits, more weapons, more ammunition and more courage.

PUBLIC RECOGNIZES ENEMY

It is gratifying to see what a splendid organization of laymen and physicians has grown up in this country for this fight. It is also gratifying to me to know that the public is recognizing the magnitude of our enemy, cardiovascular disease, which, in its 20 or more varieties, has attacked almost ten million Americans.

I am optimistic about the future of the American Heart Association on the basis of past success. The period of rapid growth is over, we can now expand more slowly. We should actually stop and re-examine our program.

With a background of more than three decades of full-time research, it is obvious that I should stress research. The primary purpose in reorganizing the American Heart Association a few years ago was to help increase the amount of money available for cardiovascular research. Education, community service, and organization are important facets of the Association but not so

important as advancing knowledge by research.

Local communities should get something immediately tangible and apparent from the funds they raise. This is best accomplished by research, since every new scientific discovery, regardless of where it is made, is something tangible that is distributed to every community. Our thinking must be molded to the viewpoint that funds are raised for a national research endeavor. Every local community must realize that over and above the immediate local needs further funds need to be raised for the national program. The public is contributing funds to the American Heart Association, its affiliates, and chapters so that we can gain knowledge better to treat and more adequately to prevent the disablements of diseases of the heart and blood vessels.

It is my hope that at least one-half of the millions of dollars raised from the public each year will be used to support research. This is true of the funds sent to the national office. All local affiliates and chapters should also set aside at least one-half the funds kept locally for this primary objective of the Association. Where facilities are available the funds set aside for research should be spent in the locality in which they are raised. But not every community or region is equipped with the personnel, physical plant and facilities for carrying on research activities. It is therefore obvious that funds in such localities should be diverted to other local regions or to the national Association for the research program.

To accomplish this prime purpose we must recruit more investigators and we must train them. We must pay the investigators adequate salaries so that they will not be distracted nor drawn away to other fields of endeavor. We have to maintain the laboratories that are demonstrating their ability to produce new information. We must procure the expensive equipment that has been found so necessary to study these disorders. We need funds to facilitate the development of newly acquired knowledge for the earliest possible translation into benefit for patients. And we must sink funds into basic research seemingly unrelated to the cardiovascular field because from such fundamental studies are apt to

come the greatest discoveries in the future as they have so often come in the past.

While research is our primary aim we must not neglect other activities. It is definitely to be recognized that knowledge must be disseminated if physicians and patients are to benefit. There is even now a good deal of information extant which has not been transmitted to all of the general practitioners and specialists. The continuing education of physicians about newer knowledge of cardiovascular disorders should be encouraged. In addition to continuing central and regional medical meetings, there should be greatly expanded utilization of pamphlets, radio, television and local medical meetings, so that every interested physician in every community, large or small, will be continuously kept abreast of the newer developments.

PHYSICIAN IS BACKBONE

The backbone of a voluntary health agency of private citizens, like the American Heart Association, is the physician, be he an internist, surgeon, pediatrician, or a general practitioner. Only with the help of the physician, will the American Heart Association make continued progress. We must endeavor to meet the needs of the physicians of this country and to see to it that every undertaking of the American Heart Association or its affiliates shall be to their best interest.

There should be a continuation of the already well developed program of transmission of what is happening in the cardiovascular field to the ancillary professions, namely the teacher, the nurse, the social worker, the medical technician, and the public health worker, as well as to the staff members of the various affiliates and chapters and to the public at large.

Local chapters and local affiliates, as well as the national Association, should take on only those areas of community service which are not covered by other agencies. Direct service to the patient should be undertaken only in the case of pilot testing to demonstrate need. The field of cardiovascular disease is so broad and the number of cardiac patients so great that any attempt to meet the direct service needs to anything like the extent attempted by other voluntary health agencies in diseases of more limited extent would be very costly,

amounting to billions of dollars. The local affiliates and chapters should concentrate instead upon leadership in integrating the activities of all agencies in the cardiovascular field in their communities. They should become the source to which individuals and other agencies may turn in finding out how best to meet and solve the problems of community service concerned with heart and blood vessel diseases. There should be close cooperation with other private health and welfare agencies and with local, state and national governmental health agencies on this subject.

In view of the urgency of the defense program there is a great need for rehabilitation of the cardiovascular patient, so that he may lead a more natural family life, may participate in the activities of his community,

and, within the capacity of his physical and mental makeup, become a self-supporting worker. The cardiac patients are a productive and still largely untapped source from which to obtain some of the manpower so badly needed to fulfill our present industrial goals. Rehabilitation of this labor source is a program upon which the national organization is embarking; it should be a primary project of the local affiliates as well.

Our growth has been steady and sound, we have had no more than the expected "growing pains." We are no longer an adolescent organization, we have attained maturity. Our program is sound, our ideals are high, our spirit of cooperation is superb, the public's confidence in us is justified and will be repayed manifold!

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

IT'S YOURS

W. A. Dozier, Jr.

Director of Public Relations

It's yours. What? The responsibility for making an organization in which you are a member function properly and progress. Each member must personally assume the responsibility for doing his part and on many occasions for putting well-phrased questions to others to be sure that they too are doing their part and carrying their share of the load.

In working with an organization the size of the Medical Association, one finds that the best method of motivation — personal contact—is possible only on occasion. This is true because of the natural limitations in time and funds. Because of this one must fall back on the next best method, or direct mail.

In direct mail there are limitations. Because of the size of the job, the mimeographing technique must be followed. Many people do not even scan through a mimeographed letter because they figure it cannot be important. In work with an organization, that is certainly an incorrect assumption.

Many of those who do read a mimeographed notice do not do anything about it. One example will illustrate here. A few months ago your Association officers and elected representatives needed help on one of their efforts. There is probably no one in the Association who does not feel strongly on the matter that was under consideration. It was felt that help would be needed from all members; so a mimeographed letter went out. Just a few days later a second letter went out, both of them to all members. After the matter was closed, and not in accord with the wishes of the Association, it was learned that in one County Society which would be considered medium-sized there were but two members who bestirred themselves. It is not a pleasant thought to the officers of your group to think of the time and energy they expended for such a poor return. And to those who still think economics have to be honored it is not a pleasant thought to compare the results with the cash expended. Nor is it pleasant to any of the members to think they did not succeed in a matter on which they feel strongly.

Another situation which too often arises in organizational work can be expressed in

what is so often jokingly referred to. "Give it to a Committee" seems to be the way many matters are buried. True some things are so directed as a means of killing them. And perhaps that may be legitimate on rare occasions. However, judging from the work of your Association, one readily sees that inertia is not the aim when an Association committee is given a job.

Naturally the chief motivating influence in a committee is the chairman, but every member of that committee has a responsibility. The chairman may plan and work all he pleases; but unless the others help, the results usually are not too good. To say the least the results are not as well thought-out as they could have been if everyone had assisted in the planning and the execution of the plan. The situation which too often arises is one wherein a committee

is set up. Then the presiding officer has to spend his time trying to persuade the chairman to get his committee to function, and the chairman in turn has to spend his time trying to motivate the respective committeemen to function properly. Think of the wasted effort, the relatively inconsequential results, and the poor showing which ensues!

Each of us bemoans the situation as it exists today. We are quick to point the finger at others who seem to be leading us in a way we do not care to go or to pick out individuals and groups who are not living up to what we think they should be. But basically cannot a great portion of the blame be laid at our own feet? Can each of us honestly say that I have assumed my full personal responsibility and have not waited for John to do it?

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

A BRIGHTER OUTLOOK FOR HEART DISEASE

You probably never heard of John A. Reitz or his wife, Fern Hold Reitz. Both were good, substantial citizens. The former served for a while as executive director of the War Collection Campaign of the Young Men's Christian Association and, more recently, was head of the Armed Services "Y" in Philadelphia. In his former position he headed a nationwide campaign to collect recreational material to help relieve the heavy tedium of U. S. service men in prisoner-of-war camps in Germany and Japan. The chances are that if your brother, son or husband enjoyed any of the approximately 121,000 games, books, pieces of athletic equipment, or magazines that were sent abroad under the Y. M. C. A.'s campaign, he is indebted to Mr. Reitz.

This public-spirited Philadelphian and his wife were recently in the news again. The occasion of their reappearance in the headlines was that they had died within 15 hours

of each other of a single form of illness. It was heart disease.

Two deaths in the same family from this cause within such a short time are unusual of course. But they are by no means as rare as you probably think they are. Just a few months after the newspapers told about the double tragedy in the Reitz family they also told about another of this kind. A Brooklyn couple, Mr. and Mrs. Aaron Cohen, died only an hour apart. The cause of their deaths, I need hardly tell you, was heart disease.

This same form of illness has brought sudden or lingering death to any number of other prominent people, as well as relatively humble folk who almost never get their names in the papers. Among a long and constantly lengthening list of fatal heart disease victims are the famous Oscar of the Waldorf, Mrs. Louise Andrews Baer, wife of the famous Arthur (Bugs) Baer, Oliver Marsh, cameraman who won two Motion Picture Academy awards, Representative M. Michael Edelstein, of New York, Edward B. McLean, onetime publisher of the Washington Post, Howard H. Jones, for three decades one of the nation's leading

football coaches, Joseph A. Pasternack, well known orchestra leader, Dr. Wilhelm Grosz, noted Viennese conductor and composer, and Dr. Artur Bodansky. Dr. Grosz's music is better known than he was. It includes "Red Sails in the Sunset" and "The Isle of Capri." Dr. Bodansky was for nearly a quarter of a century one of the conductors of the famous Metropolitan Opera, in New York.

The term *heart disease* is inclusive. Like other words and phrases, it takes in more than one form of illness. Each differs from all the others in various ways. Each is, in a sense, a separate disease entity. But all of them have one quality in common. All affect the heart and blood vessels. Exerting their combined killing power, they are by and far the greatest of all killers. Indeed no other two forms of illness bring death to as many people as this single one. And it affects many more than it kills. Estimates are that about five per cent—one out of every 20—of Americans of all ages have conditions affecting the heart and blood vessels. As we move up the age scale, the figures become more forbidding. Among people over 45, heart disease victims are said to number about one-fifth of the total population.

Now let us take a calm look at this disease which is killing and crippling so many of our famous men and women. Let us face the problem created by this so-common illness that is destroying our friends in humbler stations of life at such a distressing rate. Let us see what can be done to improve the outlook for those who are handicapped by heart disease when they try to earn livelihoods for themselves and their families.

There has been a great deal—too much—"scare talk" about this condition. It admittedly is serious. Much needs to be done about it. There is no gainsaying the grim mortality reports. But the picture is by no means all black. Indeed it has its definitely cheerful side. Let us try to place one aspect of the problem in its proper relation to the other. Let us, in brief, face the facts.

First, what sort of organ is the heart? What part does it play in human life and health?

To begin with, the average healthy heart

is a tough piece of human machinery. It has to be. Otherwise we would not survive childhood or, for that matter, even infancy. For it is constantly at work. Making its first beat before birth, it never lets up as long as life lasts. Except for momentary pauses between beats, it never rests. The best it can get in the way of an easing of its burden is to slow up somewhat when you lie down and a little bit more when you fall asleep. Whenever you become worried or excited, it is the first part of the body to react: Immediately it starts working faster. If you become really worried or aroused, it may start pounding loudly enough to be heard across the room. It reacts instantly to stimulants, from a cup of coffee to a cocktail. When you run to catch a bus, your legs are not all that start moving faster. That increased exertion calls for more blood all over the body, and it is your heart, and your heart alone, that can supply it. Unlike a lung, it has no twin to take over when it becomes tired, overworked or sick. Unlike a kidney, it cannot be removed by surgery while another relieves it. It is truly a remarkable and sturdy organ.

Your heart is probably much smaller than you think. Actually, it is only about the size of an adult fist. But, unlike the fist, which consists largely of bone and skin, it is all, or practically all, muscle. Its position in the body is in the middle of the chest, behind and slightly to the left of what your doctor calls the sternum. (You call it the breastbone.) Its responsibility is to return to the whole body, through the arteries, the blood which has been circulated through that complicated mechanism and has made its way back to the heart through the veins. Every tiny part of that mechanism depends upon the heart's proper functioning. For every one collects waste material which needs to be removed by the blood. Every one requires a constant supply of new food and oxygen. Once that blood flow ends or is seriously interfered with, the affected part or parts begin suffering serious injury. Death may result.

You probably also have an incorrect idea as to the amount of blood in your body. It is probably much less than you think, although you naturally realize that, since it is used over and over (except when some is lost through injury or sickness and has to be

replaced), not so very much is required. Actually, your body weight would drop only about a twelfth if you should suddenly lose all your blood. For only about eight per cent of its weight is accounted for in this way. So, if you are a woman weighing 110 pounds, your blood weighs about nine pounds. If you are larger, naturally, you have more blood.

Your nine, ten, 12 or 15 pounds of blood travels an amazing distance on its wanderings through the baffling maze of arteries and veins that direct its path like the tracks of a streamliner. During an average day's activities—work, play, relaxation, sleep—the work your heart does in pumping that relatively small amount of it will surprise you: Authorities estimate that your heart's "work output" on such a typical day is about what would be required to pump from nine to ten tons of blood. No wonder your heart needs to be tough. No wonder a weak or diseased heart cannot do its part in keeping the body functioning properly.

That second-by-second, minute-by-minute, hour-by-hour working of the heart is one of the most complicated operations known. Its structure is a study in efficient performance.

As already explained, the heart wall is essentially a large muscle. Inside that thick wall are four areas that are as separate from each other as the rooms of a house or apartment. (Like the rooms of an apartment or house, one is connected to another by means of the heart's counterpart of a door.) These four enclosed areas are known as auricles and ventricles. (There are two of each.) If you could get an x-ray view of and through your heart, you would find what the doctors call the right and left auricles at the top. The ventricles occupy the lower parts of the heart.

Suppose we figuratively watch blood make a round trip in our bodies. We'll begin watching it just as it returns to the heart from its latest trip.

Deprived of its oxygen and nutrient value, it enters the right auricle (that upper right section of the heart) through the great veins leading from the head and arms, the body proper and the legs. After passing into the right ventricle, it is forced by the heart's contractions into the big artery leading from

the heart to the lungs. At the end of that relatively short journey, the blood returns to the heart via the left auricle. From there it passes through one of those "doors" or valves into the left ventricle. From the left ventricle it is pumped by the heart muscles' great propelling force into another large artery. This time it is setting out on a much longer journey. Before it gets back to the entrance to the right auricle (where we began watching it under our figurative magnifying glass), it will have brought nourishment and oxygen to every remote area of the human frame. Part of its journey along that long, involved, winding pathway is through arteries and veins of tremendous size, as arteries and veins are measured. At other times it travels through passageways so tiny that one wonders how it moves at all. But back there in your chest your faithful old heart, plugging away steadily 24 hours a day, is constantly giving it the force it needs. And in time, like the stream the poets like to write about, it completes its journey. But another one must begin immediately.

Those passageways mentioned a few minutes ago connect only the auricles and the ventricles, the upper and lower areas of the heart. There is no connection between the right auricle, for example, and the left auricle or between the right and left ventricles. Although only a narrow wall bisects the heart from top to bottom, blood can get from one side to the other only indirectly. It may leave the left ventricle, make a complete transit of the circulatory system and return to the right auricle. Or it may go from the right ventricle to the lungs and then to the left auricle. And, as you hardly need to be reminded, the blood's flow is always in one direction. Those "doors" or valves inside the heart swing outward only. By one of nature's mechanical miracles, their operation prevents blood from flowing back into an area from which it has just emerged.

I am speaking of course of the healthy heart. When it is attacked by certain forms of illness, those powerfully efficient valves don't work properly. Then they may allow blood to reverse its flow inside the heart. Then the heart's owner becomes a victim of heart disease.

When that happens, the heart has simply done what any other piece of mechanism,

human or inanimate, does from time to time. Its performance is impaired. It does not function properly. It may be sluggish. It may fail completely, just as a sick animal does when fatigue, illness or injury weakens it.

All of us should take the best possible care of our hearts. We should protect them from abuse and also from disease. We should treat them with consideration at all times. We should give them as much rest as we can by resting our bodies at every opportunity. But we should not develop a heart phobia. We certainly should not make ourselves and others miserable from fear of heart disease. Nor should we expect sudden death from the first—or next—heart attack. Here is what an anonymous spokesman for the Connecticut State Department of Health has to say:

"The heart has tremendous reserves of power. It can take a lot of punishment and not break. In most cases, 'heart trouble' does not mean sudden death. Thousands of people with damaged hearts are living comfortable, happy, useful lives every day because they cooperate with their physicians in giving their hearts a chance. Many of them may live as long as they could reasonably expect to live without heart trouble. Some even have a good chance of complete recovery."

So cheer up. The heart disease picture is not as bad as you may think.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

September 1951

Examinations for diphtheria bacilli and Vincent's	463
Agglutination tests (typhoid, Brill's and undulant fever)	1,190
Typhoid cultures (blood, feces and urine)	794
Brucella cultures	12
Examinations for malaria	1,072
Examinations for intestinal parasites	3,316
Serologic tests for syphilis (blood and spinal fluid)	25,915
Darkfield examinations	4
Examinations for gonococci	1,865
Examinations for tubercle bacilli	3,031
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	63
Water examinations	1,609
Milk and dairy products examinations	3,915
Miscellaneous	2,350
Total	45,600

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1951

	July	Aug.	E. E.* Aug.
Typhoid and paratyphoid	11	16	13
Undulant fever	7	2	1
Meningitis	9	7	7
Scarlet fever	12	17	37
Whooping cough	62	43	88
Diphtheria	8	12	35
Tetanus	4	6	4
Tuberculosis	191	199	255
Tularemia	0	0	0
Amebic dysentery	0	1	3
Malaria	7	23	266
Influenza	39	34	24
Smallpox	0	0	0
Measles	141	29	27
Poliomyelitis	119	218	24
Encephalitis	0	12	1
Chickenpox	17	8	4
Typhus	5	8	57
Mumps	46	45	30
Cancer	307	341	244
Pellagra	2	4	2
Pneumonia	58	71	122
Syphilis	276	183	1464
Chancroid	6	4	14
Gonorrhea	294	273	653
Rabies—Human cases	0	0	0
Positive animal heads	19	22	0

*As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

IMPOUNDED WATER REGULATIONS

Contributed by

Claude P. Owens, B. S.

Prin. San. & Pub. Health Eng.

About the year 1915, some years after the mode of malaria transmission was proven, extensive studies were begun in Alabama and elsewhere to determine what should be done to prevent the increase of malaria around newly impounded water. Prior thereto, some very serious epidemics of malaria had occurred in such areas. The studies, continued over a period of years, resulted in the discovery of a method of control on impounded water which would prevent the production of the malaria vector, the *Anopheles quadrimaculatus* mosquito, in the absence of which malaria cannot be transmitted. Inasmuch as a number of large impounded projects were anticipated for the immediate future the State Board of Health in 1923 incorporated the method of control in the Regulations Governing the Impounding of Waters. They were repassed February 28th, 1927, were signed by the Governor, and now have the full force and effect of law.

The principal requirement of the regulations is that the basin of the project be completely cleared prior to impounding so as to produce a clean sheet of water. Other measures, such as shoreline improvement (deepening and filling) and the application of larvicides such as oil or a one per cent solution of DDT in diesel oil or kerosene, have been practiced for controlling mosquito production. The use of larvicides is usually carried out only on the larger lakes as less expensive control measures are recommended on the smaller ones.

The regulations are not retroactive; that is, they do not apply to ponds impounded prior to February 28th, 1927, except where the water level of an old pond is raised. They do not apply to ponds less than 1/10 acre or to any size project where no part of the impounded area lies less than one mile from any human habitation other than that of the owner.

All pond work after the adoption of the regulations up to 1940 was carried out by state personnel. Engineers assigned to the Malaria Control Division or District Engineers of the Bureau of Sanitation usually performed this work. Due to the demand placed on the Bureau in this field by the increase in the construction of ponds for recreation, fish raising, and stock watering over the state, it was decided in 1939 that a cooperative program between County and State Health Department personnel must be inaugurated in order to handle the increasing volume of inspection and consulting work. During 1939, there was prepared an impounded water manual outlining procedures to be followed by the health department personnel for placing ponds under the regulations. During 1940, conferences were held over the state for the purpose of discussing with County Health Department personnel the procedures to be followed in placing ponds under the regulations. At this time, the responsibility for the inspection of minor impoundages was made a function of the County Health Department's sanitation personnel.

A decision was made as to what constituted a major or minor impounded water project. The term "minor impounded water projects" includes the artificially created lakes or ponds covering an area less than 100 acres each. The impoundages falling in this

category are under the public health supervision of the health department of the county in which the impoundage is located.

The impoundages covering area greater than 100 acres are usually termed "major impounded water projects." Many aspects of anopheline mosquito control relating to these waters require special formulations and application of various larvicides. Constant surveillance of the maintenance practices and results on these larger bodies of water must be carried out. Also many of the large hydroelectric and navigation projects are situated in more than one county. For uniformity and efficiency, it is considered better that one office deal with the owners of these major impoundages. Therefore, the personnel of the Bureau of Sanitation handles all the work relating to these larger lakes. Inspections of major impoundages are usually made by representatives of the Malaria Control Division. County Health Departments concerned are usually advised in advance of inspection visits so that a member of the county's staff may accompany state personnel.

In order to promote the minor impounded water phase of the county's sanitation program, it is necessary from time to time for the district and/or central office engineers to visit counties relative to minor impounded water projects. When such a visit is made, a representative number of the ponds in the county are selected at random for inspection. The visit is written up in the form of a report. The report gives the Health Officer and the Bureau of Sanitation a good idea of the type work being performed in the county. The report is written in such a way that the Sanitation Officer can use it, together with the Impounded Water Manual, as a guide in carrying out his impounded water program.

During 1948, the Alabama Conservation Department accepted the responsibility of approving all applications from pond owners in the state for fish for stocking their projects; that is, when the fish for stocking comes from state owned hatcheries. After the owner's application is filed with that department, the game warden representing that department is required to inspect the pond, giving his opinion as to whether sufficient water is available for raising fish. During 1949, the Director of the Alabama

Conservation Department agreed that his department would not grant anyone fish for stocking a pond until after the owner furnished that department proof that he held an authority to impound from the Health Department. All Health and Conservation Department personnel were advised of the agreement between the Directors of the two Departments by letter on February 9, 1949. The cooperative program has been in operation since that time. The Alabama Conservation Department has been very cooperative with the Health Department in requiring new pond owners to have an authority to impound from that department before they consider their application for fish for stocking.

Since the adoption of the regulations a total of 26 major impoundages and about 5,000 minor impoundages, totaling over 280,000 acres in area, have been constructed in the state. This does not include a number of minor impoundages located in counties without the services of sanitation officer personnel. Very little malaria has occurred around the ponds where strict observance of the regulations has been obtained.

Iodized Table Salt—The latest findings about the importance of iodine to general good health, and the realization that the county still had far too much goiter, stirred up public health people again. A bill was introduced in Congress to require the iodizing of all table salt. The salt industry, however, opposed compulsion as impractical.

So, as a compromise, the salt manufacturers and medical groups decided upon the publicity campaign. Salt ads once more will urge you to use iodized salt to protect your health. Medical journals will jog doctors about its significance.

If you want to be hale and hearty, you will do well to fall in line. Iodized salt costs no more. Almost every store has it. Just look for the label on the box. There's no special flavor to iodized salt. It's indistinguishable in taste from the untreated variety.

It can't hurt you, and if you are not getting all the iodine you need—there's no way of telling until trouble develops—it may do you a vast amount of good. Take your food, not the warnings, with iodized grains of salt.

When the occurrence of goiter showed that attention to iodine nutrition was needed, the most practical method for its distribution was the use of some special carrier such as iodine in common salt, or iodized salt. Common salt is a most common carrier for iodine. Obviously, its general use in the home and for livestock would make it the most effective vehicle for a wide distribution and use of iodine.—*Giles, J. Michigan M. Soc., Oct. '51.*

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR JUNE 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During June 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	6503	**	**	25.7	23.5	24.6
Total stillbirths	176	**	**	26.4	29.3	33.3
Deaths, stillbirths excluded	2143	1258	885	8.5	8.7	8.3
Infant deaths:						
under one year	243	119	124	37.4	43.6	42.9
under one month	173	91	82	26.6	29.5	30.4
Causes of Death						
Tuberculosis, 001-019	69	30	39	27.2	33.9	33.1
Syphilis, 020-029	10	3	7	3.9	5.2	6.0
Typhoid and para- typhoid, 040, 041	2		2	0.8	0.8	
Dysentery, 045-048	5	1	4	2.0	1.2	0.8
Whooping cough, 056	3	1	2	1.2	2.4	1.2
Meningococcal infec- tions, 057					1.2	0.4
Poliomyelitis, 080, 081	4	4		1.6	0.4	0.4
Encephalitis, 082, 083	1		1	0.4		
Measles, 085	2	1	1	0.8		4.4
Typhus fever, 100-108						1.2
Malaria, 110-117					0.8	
Malignant neoplasms, 140-200, 202, 203†	207	143	64	81.7	85.3	89.0
Diabetes mellitus, 260	34	19	15	13.4	7.6	12.4
Pellagra, 281	2	1	1	0.8	0.4	1.2
Vascular lesions of central nervous system, 330-334	239	135	104	94.4	101.3	90.2
Other diseases of nervous system, 300-318, 340-398	23	11	12	9.1	14.8	14.8
Rheumatic fever, 400- 402	5	2	3	2.0	2.0	1.6
Diseases of the heart, 410-443	635	416	219	250.7	258.4	224.6
Diseases of the arteries, 450-456	32	20	12	12.6	8.8	14.0
Other diseases of the circulatory system, 444-447, 460-468	19	11	8	7.5	9.6	11.6
Influenza, 480-483	12	7	5	4.7	2.8	3.6
Pneumonia, 490-493	54	25	29	21.3	25.9	20.4
Bronchitis, 500-502	2	1	1	0.8	1.6	0.8
Appendicitis, 550-553	5	2	3	2.0	1.2	3.6
Intestinal obstruction and hernia, 560, 561, 570	16	8	8	6.3	6.4	8.4
Gastro-enteritis and colitis (under 2) 571.0, 764	9	3	6	3.6	8.4	11.6
Cirrhosis of liver, 581	12	7	5	4.7	8.0	4.4
Diseases of pregnancy and childbirth, 640-689	14	5	9	21.0	31.3	18.8
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2	1	1	3.0	6.6	3.1
Congenital malforma- tions, 750-759	33	22	11	5.1	4.6	3.6
Accidental deaths, total, 800-962	184	125	59	72.6	62.2	55.5
Motor vehicle acci- dents, 810-835, 960	62	41	21	24.5	25.5	17.2
All other defined causes	397	223	174	156.8	155.5	156.0
Ill-defined and un- known causes, 780, 793, 795	113	32	81	44.6	43.1	50.3

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the June report of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

NEW DRUG SUCCESSFULLY USED TO COMBAT SKIN DISORDERS

Banthine (trade name) bromide, a new drug, has been successfully used in the treatment of excessive perspiration and certain skin conditions aggravated or produced by it, an article in the Archives of Dermatology and Syphilology, published by the American Medical Association, reported.

"It is our impression that banthine is of definite value in the treatment of certain diseases of the sweat glands," according to Drs. Crawford S. Brown of Boston and I. Lewis Sandler of Washington. Dr. Sandler is assistant professor of dermatology at the Georgetown University School of Medicine.

Twenty-seven persons suffering from excessive perspiration or common skin disorders associated with it were given oral doses of the drug. Observational studies of the results were made for an average of eight weeks.

According to the report, 74 per cent of the patients showed marked improvement, 19 per cent showed moderate improvement and seven per cent showed slight improvement.

INJURIES TO BE EXPECTED IN EVENT OF BOMBING ATTACK TOLD

The physician's role in civil defense is one of helping to provide protection against bombing injuries in the event of an attack, as well as treating and rehabilitating the wounded, according to Dr. Cortez F. Enloe, Jr., of New York.

Dr. Enloe made the statement in a report to the Council on National Emergency Medical Service of the American Medical Association. He was chief of the medical service branch of the United States strategic bombing survey, and was recently awarded the Legion of Merit for his work on a survey of bombing effects on German health and medical care.

"If we are bombed tomorrow," Dr. Enloe stated, "any type of protection that can be given to the individual will be better than

none at all. But this premise, if continually accepted, is not planning. It is improvisation, and poor improvisation at that. What is required is medical planning, for that is the only sensible manner in which our profession can discharge the new and staggeringly tremendous obligation, quietly and almost imperceptibly being thrust on us by the new fact of life—civil defense."

There is little difference in the types of injuries sustained by the individual in the high explosive and fire-bomb raids and atomic bomb raids, Dr. Enloe said. Only about 20 per cent of all casualties from a heavy bomb attack on an American city would be caused by radiation, while 80 per cent would result from other external and internal injuries.

External injuries which may be expected, according to Dr. Enloe, include those resulting from burial under rubble and debris; objects flying at extreme velocity; explosions, immersion, scalding, chemical burns, poisoning and by-products of exploding bombs, and fire.

Internal injuries would include those resulting from inhalation of carbon monoxide in air raid shelters, effects of heat through conduction and thermal radiation of extremely high temperatures, overheating for a long period at temperatures that can be tolerated normally for a short time only, dust inhalations, mental collapse in the critically ill, and blast injuries in which internal injuries may or may not be masked by external injuries.

Moderately substantial shelters would protect a person from such bombing effects as burial under rubble and debris, flying debris and burns, Dr. Enloe stated. However, those sheltered from such mechanical injuries would face an even greater peril—fire.

"The crowded conditions of American cities, the height of buildings, the age of dwellings, the type of construction—all these are factors that would influence the spread of fire following an atomic attack," he said.

Dr. Enloe described some of the results of fire-bomb raids on Germany during World War II. In one raid during 1943, 60,000 inhabitants of Hamburg, Germany, were killed—almost as many as were killed in the atomic bomb raid on Hiroshima.

Many of those who died were killed by the extreme heat caused by the bombs and resultant fires. Seventy per cent of all the casualties not resulting from mechanical injury or burns were believed induced by carbon monoxide poisoning. Many bodies were found in air raid shelters, and their peaceful positions indicated a complete lack of apprehension of imminent danger.

"Carbon monoxide poisoning is one of the chief types of injuries that the physician may expect to encounter," Dr. Enloe said. "It is the characteristic cause of injury and death from the air in public air raid shelters, and improvised home shelters.

"Carbon monoxide casualties may always be expected in flaming buildings where exits have been blocked by rubble, indicating the imperative need for adequate exits. One can not glibly endorse the general attitude that the basement of every dwelling affords relative safety. It may afford safety from blast, but if the building catches fire and, as we have said, fire is the main cause of atomic bomb damage, the cellar becomes but a tomb.

"Recognition of the importance of carbon monoxide poisoning indicates the urgent need for laboratory and clinical research on the prevention and treatment of carbon monoxide intoxication."

Dr. Enloe also pointed out the possibility of water mains breaking, permitting water to seep into shelters and basements, drowning the occupants.

Contrary to expectations, Dr. Enloe said, it has not been demonstrated that air attacks on civilian population increase the incidence of psychiatric disorders.

PRIMARY CANCER OF APPENDIX NOT A RARITY, SAYS DOCTOR

Cancer originating in the appendix, although not widely known, is not a rarity, according to a report in the October 27 Journal of the American Medical Association.

One hundred and sixteen cases of the disease have been reported from only seven sources during the last few years, the author of the article, Dr. Robert J. Sillery, stated.

Dr. Sillery is attached to the U. S. Public Health Service Hospital, New Orleans.

Because it usually produces no symptoms and little prognostic information is available to the clinician, cancer of the appendix is usually not discovered until the appendix has been removed for other reasons, the report said.

"Many of the reported cases initially presented the clinical signs and symptoms of acute appendicitis; hence, carcinoma of the appendix must not be forgotten in the differential diagnosis of an acute abdominal crisis," he stressed.

From the information available, Dr. Sillery said, the removal of cancerous appendix is seldom followed by rapid recurrence of cancer and the spread of the disease to other organs. The rate of cure is relatively high, he added.

TREAT HUMAN BITE INFECTIONS SUCCESSFULLY WITH BACITRACIN

The successful use of bacitracin, one of the antibiotics, in the treatment of infections resulting from human bites was reported in a recent issue of the Journal of the American Medical Association.

Infections from such bites are caused by bacteria both in the mouth of the biter and on the skin of the recipient of the bite, according to the authors of the article, Drs. Irving A. Levin and Alfred B. Longacre, of the Louisiana State University School of Medicine, New Orleans.

Because the external characteristics of human bites are so misleading that patients frequently neglect them until inflammation has occurred, serious infections and crippling effects often result, the doctors wrote. The most frequent human bites occur on the back of the hand and are incurred when the closed fist strikes the teeth of an opponent in a fight.

The doctors' report covered 27 persons suffering from infections resulting from human bites. Eleven bites were on the back of the hand, eight on the fingers, one on the palm of the hand, and the others on various parts of the body.

In 23 cases, penicillin, streptomycin and sulfadiazine were used, either alone or in combination. In four cases, bacitracin was used solely. All 27 cases were successfully treated.

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CHEST PAIN PRODUCED BY HYPERVENTILATION WITH SPASM OF INTERCOSTAL MUSCLES

RELIEF BY CALCIUM

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Bennett and Willoughby¹ reported intercostal spasm with striking relief by calcium gluconate in patients with acute pleuritis. The purpose of the present report is to indicate that similar pain may be produced by hyperventilation.

REPORT OF CASE

N. C., a 45-year old white spinster and school teacher, was seen in 1951, with the chief complaint of chest pain of 21 months' duration. She had been in good health until 1949, when hysterectomy had been performed because of six months of constant metrorrhagia. Five days after the operation she experienced a sharp, cutting pain in the left anterior chest. It was located near the cardiac apex but radiated around the breast, up to the shoulder, and down the left arm into the hand. This pain persisted for 2 to 3 minutes, and was completely gone. She did not recall whether the pain was aggravated by breathing. There was no cough nor hemoptysis. After 11 days of hospitalization she returned home in good condition, and resumed her normal activity of teaching the fourth grade.

During the next five months she experienced occasional mild episodes of similar pain lasting 2 to 4 minutes. These episodes were unrelated to activity or position. They were preceded by a heavy feeling in the apical region, numbness of the lips, and tingling of the fingers of the left hand. Occasionally, the left foot felt numb, and on one occasion the left corner of the mouth seemed to pull down.

In January 1951 about 10:00 A. M., while sitting at her desk at school, the patient had a severe attack of chest pain. It began as a flutter in the left lateral chest region, and soon became a sharp, cramp-like pain. It radiated around and up to the left infraclavicular region, where it felt as if a ball were expanding. The left arm and hand felt completely dead, and tingled as though they were asleep. The left ankle and foot had the same feeling. There was marked circumoral numbness, and the left corner of the mouth felt as if it were pulled downward. The pain persisted for about 30 minutes to one hour and became better, but never completely disappeared except when sedatives were administered. It was at this time that she first noted exaggeration of the pain on deep breathing.

Because of the pain she remained at rest for several weeks. Upon resuming activity she noted that the pain was exaggerated by

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1. Bennett, Ivan L., Jr., and Willoughby, Lathen: Pleuritic Pain: Use of Intravenous Calcium Gluconate in its Relief, *Am. J. Med. Sc.* 215: 431, 1948.

effort. She would also become short of breath while developing the pain, and the pain paralleled the dyspnea, because it was exaggerated by each inspiration. The shortness of breath was described as, "I can't get my breath all the way down, no matter how hard I try." She was then seen by another physician, who found electrocardiographic abnormalities and made a diagnosis of angina pectoris. She found, however, that she did not obtain relief from nitroglycerin. A second consultant told her that she did not have angina, and that the trouble was "in her head."

She stated that she had not been free of chest pain for more than a year. Past history, systemic review, and family history are noncontributory. The social history was significant. She had never married because

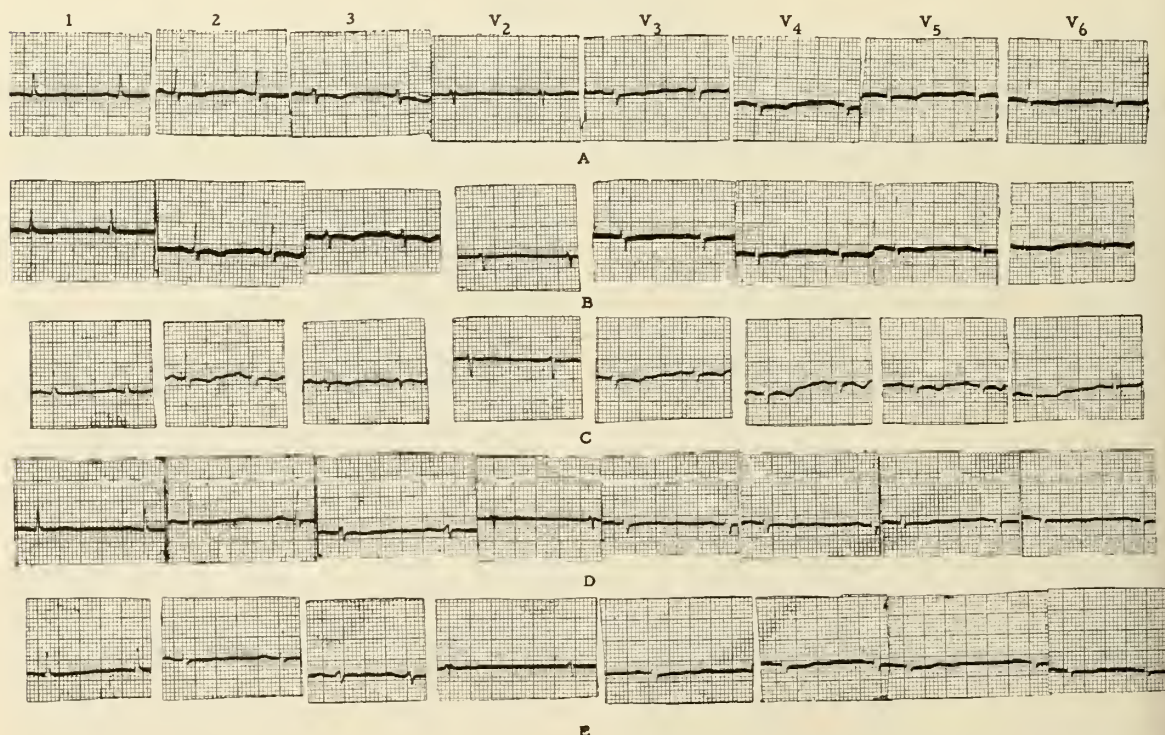
her father and mother had been dependent on her, as the other brothers and sisters had married and moved away. She had deliberately avoided matrimony because she had dependent relatives.

Physical examination revealed a well developed, well nourished, frightened, white female who talked in a whisper. She groaned and sighed frequently, and there was obvious hyperventilation. Blood pressure was 130/90, pulse rate 80, respirations 34, and temperature 98°F.

The remainder of the examination was negative except that deep inspiration or complete expiration was associated with definite aggravation of her chest pain.

Additional findings: Electrocardiogram revealed flat T waves in leads I, AVL, V₁,

FIGURE 1
LEADS



A reveals inversion of T waves in leads II, III, V₃, V₄, and V₅ with minimal S-T segment depression in V leads 3 through 6. These are minimal but definite changes that were chronically present due to mild hyperventilation.

B represents the record taken after nitroglycerin and shows that there is no change from the control record.

C is the record taken during an episode of marked hyperventilation with severe chest pain and reveals aggravation of the T wave abnor-

malities. This is most marked in V leads 3, 4, and 5.

D represents the record taken after 10 cc. of ten per cent calcium gluconate intravenously and shows definite reversion of T waves toward normal.

E was taken after 50 cc. of ten per cent calcium gluconate intravenously given in 1000 cc. of dextrose and water. Although the record was not completely normal, the changes have reverted to more nearly normal than at any other time during the study.

and V_2 , and inverted T waves in leads II, III, AVR, AVF, V_3 , V_4 , V_5 , and V_6 . There was slight depression of the S-T segment in leads V_3 through V_6 . After exercise, the record changed very little, the changes being toward normal.

The vital capacity was 4,000 ml.

Fluoroscopy revealed a small heart. Diaphragmatic excursions were good. However, there was thought to be slightly more excursion on the right side. The thoracic cage was found to expand fairly well bilaterally, but there was less expansion of the left chest. The patient was then instructed to hyperventilate. The diaphragmatic leaves retained normal excursion. However, after about two minutes of hyperventilation the left chest wall remained almost stationary. The rib shadows on the left were seen to be pulled closer together than on the right, and it appeared that the left intercostal muscles were in spasm. Expansion of the right chest was approximately 2 cm.; that of the left was not more than $\frac{1}{2}$ cm. At the same time the pain, which was minimal before the hyperventilation, became severe.

Several therapeutic procedures were tried, the effects on the pain and on the electrocardiogram being observed. Fig. 1 A represents the control electrocardiogram. The AV leads and V_1 are omitted to conserve space, as they do not contribute any additional information beyond that shown in the limb leads. There was flatness of the T waves in leads I, AVL, V_1 , and V_2 , with inversion of the T waves in leads II, III, AVR, V_3 , V_4 , V_5 , and V_6 . This is characteristic of electrocardiographic changes seen in hyperventilation.² Nitroglycerin (0.0004 Gm.) produced severe pounding in the head but did not relieve any of her symptoms. There was no change in the electrocardiogram (Fig. 1 B). Breathing pure oxygen for 10 minutes caused no subjective improvement, and the electrocardiogram showed no change from the control. Breathing 5 per cent CO_2 and 95 per cent oxygen for 7 minutes produced striking hyperventilation. The symptoms did not change while this mixture was being breathed and the electrocardiogram remained the same, but upon removing the mask, the overbreathing con-

tinued and a severe episode of pain was produced. She began to weep and hold her chest. An electrocardiogram taken at this time revealed an exaggeration of abnormalities, in that the T waves became more deeply inverted (Fig. 1 C). She was then given 10 ml. of 10 per cent calcium gluconate intravenously, with dramatic and almost complete relief. An electrocardiogram was taken, which revealed some reversion of the T waves toward normal (Fig. 1 D). This relief persisted for 3 to 4 hours, and the symptoms began to return. The next day she received 50 ml. of 10 per cent calcium gluconate in 1,000 ml. of 5 per cent glucose in distilled water. Complete relief of all symptoms was again noted. The electrocardiogram, while not entirely normal, was nearer normal than it had been at any time during this study (Fig. 1 E). The patient remained asymptomatic for 24 hours, and was then started on oral calcium gluconate and vitamin D. A thorough explanation as to the cause of her symptoms was given her, which she accepted. She remained in the hospital an additional 3 days without recurrence of symptoms, and was sent home.

She has now been followed for four months, and has remained well on oral calcium salts and vitamin D. There is no doubt that reassurance has contributed a great deal. She is now receiving minimal doses of both calcium and vitamin D, and is able to work and carry on a normal life.

DISCUSSION

Chest pain of some degree is a common symptom in anxious people who hyperventilate. However, severe pain is uncommon.

Multiple mechanisms have been cited as responsible for chest pain produced by hyperventilation. At least three types of pain have been described. The first type is described as a sharp knife-like pain, fleeting in character, which is aggravated by deep breathing or bending, and which begins in the left chest anteriorly, or in the hypochondrium, and radiates into the neck or back. Rice³ believes this type of pain is brought on by air swallowing, with overdistention of the stomach and pressure on the diaphragm. He was able to reproduce it by applying pressure over the stomach.

2. Thompson, W. P.: The Electrocardiogram in the Hyperventilation Syndrome, *Am. Heart J.* 25: 372, 1943.

3. Rice, R. L.: Symptom Patterns of the Hyperventilation Syndrome, *Am. J. Med.* 8: 691, 1950.

Friedman,⁴ on the other hand, was able to record transient arrhythmias in some patients and forceful rapid heart action in others with this type of pain, and, therefore, concluded that it was myocardial in origin.

A second type of pain described is that of a dull aching or gnawing discomfort over the precordium, which is steady and lasts for hours. It is pointed out by several authors—Wood,⁵ Friedman,⁶ and Rice³—that patients with this type of pain breathe in a peculiar manner. They used only the upper chest muscles in breathing, whereas normally the lower chest muscles and abdominal muscles are used. These patients are seen to revert to normal breathing when asleep. Friedman⁷ demonstrated that patients of this type exhibited greater chest expansion in the upper third, as compared to a normal individual's greater expansion in the lower third of the thorax. He also observed, by use of the fluoroscope, that the diaphragm of these individuals remained almost completely immobile during respiration. It is, therefore, postulated that this type of discomfort is produced as a result of diaphragmatic inertia. Friedman was able to reproduce this pain in normal subjects by strapping the lower chest and upper abdomen, causing them to breathe with the upper chest muscles. Further, the patients with this type of pain were seen to be relieved in 48 hours by strapping the upper chest in such a way that these muscles could not be used. The pain was observed to return within 24 hours after the wrapping was removed, and the patients resorted again to upper chest breathing.

A third type of pain has been described in patients with hyperventilation. This is a heavy, pressing substernal discomfort which persists as long as hyperventilation is manifest.³ This sensation is thought to be caused

by fatigue of the respiratory muscles due to excessive use.

In this patient a fourth type of pain, that produced by spasms of the intercostal muscles, becomes evident. The combination of exertional constrictive chest pain and electrocardiographic changes had led to the mistaken diagnosis of angina pectoris. On the other hand, the pain was sharply aggravated by breathing, a feature which is conspicuously lacking in true angina. Furthermore, nitroglycerin was without benefit. The relationship to exertion was apparently due to the hyperventilation induced by exertion. Another important differential point was the presence of continuous mild pain with exertional aggravation. Patients with angina are ordinarily entirely free of pain during the intervals between seizures.

Why calcium will sometimes relieve painful muscle spasm of this type is not definitely known. It has been stated that hyperventilation is associated with a loss of CO₂, increase in pH of the blood, and consequent decrease in ionized calcium due to combination of some of the ionized calcium with protein,⁸ the total calcium remaining unchanged. While it is obvious that CO₂ is being lost in excess, and it is well known that there is an increase in blood pH, it has not been established that there is a reduction in ionized calcium. Gunther and Greenberg⁹ measured the diffusible calcium and nondiffusible calcium after hyperventilation and found no decrease. This measurement was made at a time when the blood pH had increased by as much as 0.2 pH units. They, therefore, concluded that hyperventilation tetany was not associated with a reduction in ionized calcium. Likewise, Schultzer and Lebel¹⁰ found no decrease in ionized calcium in the presence of an increase in blood pH due to hyperventilation. Patients of these authors obtained no benefit from calcium salts in hyperventilation tetany. Further,

4. Friedman, M.: *Functional Cardiovascular Disease*, Williams & Wilkins Co., Baltimore, 1947, p. 25.

5. Wood, P.: *Da Costa's Syndrome*, Brit. M. J. 1: 767, 805, 845, 1951.

6. Friedman, M.: *Functional Cardiovascular Disease*, Williams & Wilkins Co., Baltimore, 1947, p. 42.

7. Friedman, M.: *Studies Concerning the Etiology and Pathogenesis of Neurocirculatory Asthenia. IV. The Respiratory Manifestations of Neurocirculatory Asthenia*, Am. Heart J. 30: 557, 1945.

8. Freudenberg, E., and Gyorgy, P.: *Tetany and Alkalosis*, Klin. Wchnschr. 2: 1539, 1943.

9. Gunther, L., and Greenberg, D. M.: *The Diffusible Calcium of the Blood Stream in Tetany*, Arch. Int. Med. 47: 660, 1931.

10. Schultzer, P., and Lebel, H.: *Spontaneous Hyperventilation Tetany. Report on 2 Cases, Including Investigation on Calcium and Ionized Calcium in Blood Serum, Outside and During Attack*, Acta med. Scandinav. 101: 303, 1939.

they administered intravenous calcium and raised the serum level to 12 mg./100 ml. and could not prevent hyperventilation tetany nor prolong the time for its occurrence. On the other hand, there have been other reports of good results with the use of calcium for symptoms produced by hyperventilation. We are not able to clarify the reason for these conflicting reports. In any case, there seemed to be no doubt of the dramatic immediate effect of calcium in relieving this pain in our patient. On the other hand, reassurance was probably responsible for much of her lasting improvement.

SUMMARY

1. A patient with hyperventilation, severe chest pain, and minor electrocardiographic changes had been incorrectly considered to be suffering from angina pectoris.
2. Intercostal muscle spasm was demonstrated fluoroscopically. This was thought to be the cause of the chest pain.
3. We are not able to clarify the confusion in the literature as to whether or not the symptoms are due to reduced ionized calcium but dramatic relief was observed following the administration of calcium salts.

THE USE OF ANTIBIOTICS IN THE PREVENTION AND TREATMENT OF HEART DISEASES

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The introduction of antibiotic therapy has served to usher in a new era in cardiology. Beginning in 1935, the discovery of the first sulfa drug and the subsequent discoveries of the presently known antimicrobial agents have been valuable additions to the armamentarium of cardiac therapy. Most certainly this is only the beginning, as clinical and laboratory investigations continue on a large scale in search of perfection. It is timely, however, to summarize briefly what has been accomplished so far with these new therapeutic weapons in the prevention and treatment of diseases of the heart.

I. ANTIBIOTIC PROPHYLAXIS OF HEART DISEASES

The use of antibiotics as prophylactic measures in cardiology will be discussed under four headings:

1. PREVENTION OF RHEUMATIC FEVER BY TREATMENT OF THE ANTECEDENT STREPTOCOCCAL INFECTIONS

The role of the beta hemolytic streptococcus in the pathogenesis of rheumatic fever is now well established. Following streptococcal sore throat and scarlet fever, there

is a period of immune-body formation when probably a faulty product of an antigen-antibody reaction causes injury to the collagenous tissues producing the clinical picture of rheumatic fever. With this knowledge one might conclude that rheumatic fever could be prevented by the early and successful eradication of the beta hemolytic streptococcus during the antecedent attack of upper respiratory infection, or of scarlet fever.

Unfortunately, there are only a few somewhat conflicting reports as to the efficacy of antibiotics in the prevention of rheumatic fever by treatment of the preceding streptococcal infections. Several observers express the opinion that, once the hemolytic streptococcal infection has begun, antibiotics will not prevent the subsequent development of rheumatic fever.^{1, 2} Attempts with sulfa drugs have not been successful.³ On the other hand, Massell and his co-workers have reported that rheumatic fever recurrences in rheumatic subjects developed after

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1. Primer on the Rheumatic Diseases, Report Prepared by a Committee of the American Rheumatism Association, J. A. M. A. 139: 1075 (Apr. 16) 1949.

2. Spink, W. W.: Discussion of paper by Massell et al. 10.

3. Massell, B. F., and Jones, T. D.: The Effect of Sulfanilamide on Rheumatic Fever and Chorea, New England J. Med. 218: 876 (May 26) 1938.

only two out of a total of 34 hemolytic streptococcal infections in which penicillin therapy was begun promptly and given for ten days in the amount of 1 million units daily in 3 to 5 divided doses. In contrast, there were 6 instances of rheumatic fever recurrences following 12 similar infections in which penicillin therapy was not used.⁴

Wannamaker and his group reported the results of a study on 2,340 patients with exudative tonsillitis and pharyngitis. About half of the group received procaine penicillin G in oil containing 2 per cent aluminum monostearate according to one of three dosage schedules and the other half remained untreated. Two cases of definite and three cases of possible rheumatic fever developed in the treated group, while 28 cases of definite and 7 cases of possible rheumatic fever developed in the untreated group. Penicillin therapy eradicated the streptococcus from the oropharynx in the majority of the cases and inhibited the formation of anti-streptolysin immune-body. The most marked inhibition of antibody was obtained by the following treatment schedule: 300 thousand units on admission, repeated in 48 hours, and 600 thousand units given at 96 hours.^{5, 6}

Similarly good results have been reported by Rantz et al. in the prevention of "post-streptococcal non-suppurative complications" with early and intensive treatment with penicillin.⁷

4. Massell, B. F.; Sturgis, G. P.; Knobloch, J. D.; Streeper, R. B.; Hall, T. N., and Norcross, P.: Prevention of Rheumatic Fever by Prompt Penicillin Therapy of Hemolytic Streptococcal Respiratory Infections. Progress Report, J. A. M. A. 146: 1469 (Aug. 18) 1951.

5. Houser, H. B.; Wannamaker, L. W.; Rammelkamp, C. H., Jr.; Denny, F. W.; Brink, W. R.; Hahn, E. D., and Dingle, J. H.: Prophylaxis of Acute Rheumatic Fever by Treatment of the Preceding Streptococcal Infection with Various Amounts of Penicillin, J. Lab. & Clin. Med. 36: 839 (Nov.) 1950.

6. Wannamaker, L. W.; Rammelkamp, C. H., Jr.; Denny, F. W.; Brink, W. R.; Houser, H. B.; Hahn, E. D., and Dingle, J. H.: Prophylaxis of Acute Rheumatic Fever by Treatment of the Preceding Streptococcal Infection with Various Amounts of Depot Penicillin, Am. J. Med. 10: 673 (June) 1951.

7. Rantz, L. A.; Boisvert, P. L., and Spink, W. W.: Hemolytic Streptococcal Sore Throat. The Poststreptococcal State, Arch. Int. Med. 79: 401, 1947.

Weinstein and Perrin studied a group of 356 children with scarlet fever who were given 150 thousand units of oral penicillin every 8 hours for 10 days. Only 3 cases of probable rheumatic fever developed in this group and rheumatic fever was suspected in 3 other cases.⁸ In another report, Weinstein and his associates found 12 acute rheumatic fever cases developed in 167 patients with scarlet fever treated with penicillin. The discrepancy between the two groups of patients is thought by the authors to be due to the lack of serial electrocardiograms and repeated laboratory studies in the former group. Therefore, the mild cases probably escaped detection.⁹ Unfortunately, studies in both groups of patients were carried out without controls. One could assume that, in the series of Wannamaker and his associates, rheumatic fever was not recognized in a certain proportion of their cases because serial laboratory studies were not done. However, this clinical entity was not recognized in both the treated and untreated groups. The marked statistical difference in the incidence of clinical rheumatic fever between the treated and untreated group appears to establish the value of penicillin in the prevention of rheumatic fever.

While further confirmatory reports are needed, the clinician is justified—even urged—to treat early and intensively with penicillin all streptococcal infections of the upper respiratory tract, together with all cases of scarlet fever, the aim in this therapy being not only to prevent suppurative complications but also to prevent rheumatic fever. This precaution is even more obligatory in persons who have had previous attacks of rheumatic fever, thus having shown a tendency to develop this disease.

It should be emphasized, though, that after the development of rheumatic fever antibiotics have no effect upon its course. However, it is wise even at this stage of the disease to attempt to eradicate hemolytic

8. Weinstein, L., and Perrin, T. S.: The Treatment of Scarlet Fever with Penicillin G Administered Orally Three Times a Day, J. Pediat. 37: 844 (Dec.) 1950.

9. Weinstein, L.; Bachrach, L., and Boyer, N. H.: Observations on the Development of Rheumatic Fever and Glomerulonephritis in Cases of Scarlet Fever Treated with Penicillin, New England J. Med. 242: 1002 (June 29) 1950.

streptococci from the upper respiratory tract by a course of penicillin. This may prevent a carrier state and reduce the spread of the infection. It has been shown that penicillin markedly reduces the number of streptococci in the throat but complete eradication is rare.^{10, 11, 12}

2. PREVENTION OF STREPTOCOCCAL INFECTIONS IN PATIENTS WITH RHEUMATIC FEVER

The incidence of recurrences of rheumatic fever following hemolytic streptococcal infections in patients previously afflicted with the disease has been shown to be as high as 40 to 50 per cent. Since it is still undetermined whether penicillin can prevent an attack of rheumatic fever after the inciting hemolytic streptococcal infection has begun, and, furthermore, in many hemolytic streptococci infections the symptoms are so mild that they go unnoticed, the prevention of infection with this organism appears to be the most promising way to prevent recurrences of rheumatic fever. Before the era of antibiotics little could be done to effect this purpose. After the introduction of sulfa drugs, attempts were made to keep these patients on a daily maintenance dose of the drug during the months when upper respiratory infections most commonly occur.¹³ The value of this regimen was questionable; in addition, it carried the risk of toxic reactions and therefore the inconvenience of periodic office and laboratory examinations. The introduction of penicillin has eliminated these disadvantages and replaced sulfa drugs in the prevention of recurrences of rheumatic fever.

Kohn and his associates have reported the

results of a three-year study, using various dosage schedules. They found that 200 thousand units of oral penicillin given four times a day (half an hour before the three meals and at bedtime) for seven consecutive days during the first week of each month throughout the school year significantly reduced the incidence of hemolytic streptococcal infections in the throats of children who had had previous attacks of rheumatic fever. The recurrence rate of rheumatic fever was zero in the penicillin treated group compared with 11 and 19 per cent in two control groups. This method was further simplified with the use of one oral tablet of 250 thousand units of penicillin given three times daily, half an hour before meals. There was no difference in recurrence rate noted.¹¹

It is probable that even a more simplified method exists, i. e., using the long acting parenteral penicillin preparations. A single injection of procaine penicillin in oil with aluminum monostearate given in the proper amount once a month may produce an adequate blood level for as long as one week. This type of therapy may replace the aforementioned oral schedule.

Occasionally, two types of complications may arise during extended administration of penicillin. One is the sensitivity reaction, the other, the emergence of penicillin-resistant streptococci. Sensitivity reactions have been reported to occur in about one to three per cent of cases. The shift to penicillin O in patients showing hypersensitivity to penicillin most likely will solve this difficulty.¹² Intermittent administration of the drug will probably prevent the biologic complication of the development of penicillin resistant organisms.

3. PREVENTION OF BACTEREMIA AND SUBSEQUENT SUBACUTE BACTERIAL ENDOCARDITIS AFTER SURGERY AND TRAUMA IN PATIENTS WITH RHEUMATIC OR CONGENITAL HEART DISEASE

The most dreaded complication of rheumatic and congenital heart disease is subacute bacterial endocarditis. While in many cases the factors which induce these complications are unknown, a great many cases have been seen following surgery or trauma. The occurrence of bacteremia following surgery or trauma creates the danger of bacterial invasion of the damaged leaflets of the heart.

10. Massell, B. F.; Dow, J. W., and Jones, T. D.: Orally Administered Penicillin in Patients with Rheumatic Fever, *J. A. M. A.* 138: 1030 (Dec. 4) 1948.

11. Kohn, K. H.; Milzer, A., and MacLean, H.: Oral Penicillin Prophylaxis of Recurrences of Rheumatic Fever: Interim Report on Method after Three Year Study, *J. A. M. A.* 142: 20 (Jan. 7) 1950.

12. Volini, I. F.; Shlaes, W. H., and Felsenfeld, O.: Use of Penicillin O in Patients Hypersensitive to Penicillin G, *J. A. M. A.* 143: 794 (July 1) 1950.

13. Rosenberg, E. F., and Hench, P. S.: Recent Advances in the Treatment of Rheumatic Fever, with Special Reference to Sulfonamide Prophylaxis and Intravenous Salicylate Therapy, *M. Clin. North America* 30: 489 (May) 1946.

The incidence of bacteremia following tooth extraction has been studied by several groups of investigators. Blood cultures have been found to be positive for *Streptococcus viridans* and nonhemolytic streptococci (the two important organisms in the pathogenesis of subacute bacterial endocarditis) in from 34 to 56 per cent of these cases immediately after tooth extraction. When penicillin was administered prior to dental extraction, the incidence of positive cultures dropped to 15 to 4 per cent.^{14, 15, 16}

Although aureomycin and gantrisin have also been recommended for this purpose, an injection of 600,000 units of procaine penicillin G in oil with aluminum monostearate, given 24 hours before extraction, appears to be the method of choice. Any antibiotic may be satisfactory which gives a therapeutic antibiotic blood level at the time of extraction and during the following 48 hours.

Similarly, patients with rheumatic or congenital heart disease should be fully protected from bacteremia by the use of antibiotics during tonsillectomy or any other surgical, obstetrical or gynecological procedure. The penicillin dosage should be 10 million units a day for protection against enterococcal infections in patients undergoing rectal or genito-urinary operations.

4. PREVENTION OF SYPHILITIC HEART DISEASE BY ADEQUATE TREATMENT OF THE SYPHILITIC INFECTION

The treatment of syphilis is one of the greatest achievements of antibiotic therapy. This distinction has been made possible by its effectiveness, simplicity and lack of toxicity.

The fact that syphilis is doomed as a

scourge of mankind is mostly due to the simplicity of treatment with penicillin. In contrast to the years needed for the arsenic and heavy metal therapy, the present schedule consists of only a few injections of penicillin administered for a period of not over three or four weeks. The importance of this simplification lies in the fact that patients are able to complete treatment, whereas, with the old method, a large proportion of patients disappeared before treatment could be completed.

It is beyond the scope of this paper to discuss treatment schedules in detail, since there have been as many different schedules recommended as there have been papers written on this subject. The trend today is to attempt to find the minimal number of injections with the minimal effective dose to cure syphilis. Good results have already been reported with such schedules as four injections at weekly intervals or even a single injection of 2,400,000 units.¹⁷ However, more time and intensive study is needed before one of these "miraculous" schedules can replace the present "conservative" procedure of 10 to 20 injections.

With the present day chance of curing all syphilitic infection in patients who once entered the physician's office, there is good reason to predict a reduction of the incidence of syphilitic heart disease.

II. ANTIBIOTIC THERAPY OF HEART DISEASES*

There are two principal fields in cardiology that deal with antibiotic therapy and the following discussion will include only the treatment of endocarditis and syphilitic heart disease. Perhaps, if this discussion were of wider scope, it should include the treatment of pericarditis, chronic pulmonary infections in the management of cor pulmonale and renal infections in some cases of hypertension. However, the limited scope of this paper precludes consideration of these subjects.

17. Thomas, E. W.; Rein, C. R.; Landy, S., and Kitchen, D. K.: Results of Single and Multiple Injection Schedules for the Treatment of Early Syphilis with Penicillin in Oil and Aluminum Monostearate, *Am. J. Syph., Gonorr. & Ven. Dis.* 34: 331 (July) 1950.

*The discussion will not differentiate between acute and subacute bacterial endocarditis unless so specified since there is no principal difference in the antibiotic treatment of the two stages of this disease.

14. Rhoads, P. S., and Schram, W. R.: Bacteremia Following Tooth Extraction; Prevention with Penicillin and 3, 4-Dimethyl-5-Sulfanilamide-Isoxazole (Gantrosan), *Proc. Central Soc. Clin. Research, J. Lab. & Clin. Med.* 33: 146 (Nov.) 1948.

15. Hirsh, H. L.; Vivino, J. J.; Merril, A., and Dowling, H. F.: Effect of Prophylactically Administered Penicillin on Incidence of Bacteremia Following Extraction of Teeth; Results in Patients with Healed Rheumatic and Bacterial Endocarditis, *Arch. Int. Med.* 81: 868 (June) 1948.

16. Roth, O.; Cavallaro, A. L.; Parrott, R. H., and Celentano, R.: Aureomycin in Prevention of Bacteremia Following Tooth Extraction, *A. M. A. Arch. Int. Med.* 86: 498 (Oct.) 1950.

A. ANTIBIOTIC THERAPY OF ENDOCARDITIS

Bacterial endocarditis, long thought to be fatal, has now become curable with the introduction of antibiotics.

Lichtman has collected a series of 2,596 cases of subacute bacterial endocarditis from the pre-sulfonamide era that had a recovery rate of one per cent and 659 cases from the sulfonamide era with a recovery rate of 4.9 per cent.¹⁸ Recovery with penicillin therapy has been reported in about two-thirds of the cases with some variations of the figures by the different authors.^{19, 20, 21}

The relative inactivity of sulfonamides and efficacy of penicillin in this disease has been investigated by Nathanson and Liebholt. They succeeded in demonstrating that while sulfa drugs are unable to pass the fibrin barrier that protects the infecting organisms on the endocardium, penicillin and streptomycin show ability to penetrate fibrin and allow it to exert antibacterial activity.²²

Friedberg has reported that the present results are therapeutically unsatisfactory and claims that, on this basis, 95 per cent of the cases of bacterial endocarditis should be cured.²¹ This hypothetical claim has been substantiated by such reports as Lowe's, who cured 92 per cent of his series of 25 undeteriorated cases of subacute bacterial endocarditis.²³ However, all cases do not respond to antibiotic therapy.

18. Lichtman, S. S.: Treatment of Subacute Bacterial Endocarditis; Current Results, *Ann. Int. Med.* 19: 787, 1943.

19. Gorlin, R.; Favour, C. B., and Emery, F. J.: Long Term Follow-Up Study of Penicillin-Treated Subacute Bacterial Endocarditis, *New England J. Med.* 242: 995, 1950.

20. Griffith, G. C., and Levinson, D. C.: Subacute Bacterial Endocarditis; a Report on 57 Patients Treated with Massive Doses of Penicillin, *California Med.* 71: 403, 1949.

21. Friedberg, C. K.: Subacute Bacterial Endocarditis: Revision of Diagnostic Criteria and Therapy, *J. A. M. A.* 144: 527 (Oct. 14) 1950.

22. Nathanson, M. H., and Liebholt, R. A.: Studies Relative to the Chemotherapy of Bacterial Endocarditis, *Ann. Int. Med.* 33: 1224 (Nov.) 1950.

23. Lowe, L.: Subacute Bacterial Endocarditis: Diagnosis and Present Day Treatment, *Am. Pract. & Digest Treat.* 1: 349 (Apr.) 1950.

Several investigators have made a critical analysis of cases where therapy has failed, in order to discover the causes of unsatisfactory results. The principal reasons for failure have been found to be as follows: (1) delay in beginning treatment, (2) improper choice or inadequate dosage of antibiotics, (3) failure to use a combination of antibiotics, and (4) failure to recognize mixed infections.

1. Delay of Treatment

Delay in initiation of treatment is usually due to failure to make the correct diagnosis, especially in waiting too long for a positive blood culture.

Since we are lucky to possess an effective weapon against this deadly disease and inasmuch as its early application is one of the necessities for successful therapy, the diagnostic criteria of subacute bacterial endocarditis were found to be inadequate and had to be revised. It is recommended that the disease be suspected in every case of "fever of unknown origin" of over one week's duration in the presence of organic cardiac murmur and even more so in individuals known to have rheumatic or congenital heart disease. It is now considered imperative to initiate therapy after several blood cultures have been taken during a two day period, without waiting for the isolation of the organism.²¹

Where there are good laboratory facilities, the organism can be grown in 85 to 95 per cent of cases.²³ However, it has been found that if the blood cultures taken during the first two days are reported sterile, the chance of subsequent cultures proving positive is so minimal that delaying treatment over two days in cases where the diagnosis seems otherwise obvious is not justified.²⁰

2. Improper Choice or Inadequate Dosage of Antibiotics

Identification of the causative organism and determination of its sensitivity are requisites in assuring adequate therapy. After antibiotic treatment has been initiated, periodic plasma antibiotic level determinations and blood cultures taken at frequent intervals will determine the adequacy of dosage of the chosen antibiotic.

It is obvious that a good laboratory is essential in the antibiotic therapy of bacterial endocarditis.

The type of organism isolated in these cases varies. Ninety per cent of the organisms recovered are streptococci. The remaining ten per cent includes a wide variety of organisms such as staphylococcus, pneumococcus, influenzae, gonococcus, meningococcus, brucella, anthrax, diphtheria, etc. Mixed infections are common.

(a) Streptococcal Endocarditis

The majority of all cases of endocarditis are caused by streptococci. Five to ten per cent of these organisms belong to the enterococcus group, the rest are viridans and non-hemolytic strains.

About 90 per cent of all the streptococci infections are inhibited in vitro by 0.1 units of penicillin per cubic centimeter. The remaining 10 per cent, represented mostly by the enterococcus group, requires from 1 to 10 or more units per milliter for the inhibition of growth in vitro.

In clinical practice, a blood level of at least five times the concentration of the penicillin which inhibits the organism in vitro is necessary for adequate treatment. While serum penicillin levels after various amounts of this antibiotic are not definitely predictable, there are known amounts of penicillin that must be administered in order to obtain a desired level.

Organisms with a sensitivity range of 0.1 units/ml. or less will be inhibited by a daily dose of 1 million units; those with a sensitivity range of 0.1 to 0.5 units/ml. should receive from 2 million to 5 million units daily; organisms inhibited by 0.5 to 1.0 units/ml. will require from 5 million to 10 million units per day. Doses as high as 50 million units per day, or more, may be given for resistant organisms requiring 10 to 30 units or more per ml. of culture for in vitro inhibition.

Enhancing agents such as carinamide or benemid should be used in cases where a high serum concentration of penicillin is required.

If treatment is started before the isolation of the causative organisms, 1,000,000 units per day will usually suffice. This dosage should be adjusted if necessary after the organism has been identified and its sensitivity determined.

In those cases in which no organism can

be isolated, the recommended dosage of penicillin should be not less than 5 million to 10 million units per day.²⁴ This is necessary because these cases have been found to be more resistant to treatment.

In patients in whom the causative organisms have been isolated and follow-up blood cultures have not become negative within a few days, the dosage of penicillin should be increased, regardless of the in vitro sensitivity of the organism.

The course of therapy should be continued over a period of from three to six weeks. The interval of administration should be frequent, i. e., every three hours by intramuscular injections. The continuous intravenous and intramuscular drip methods are usually unnecessary.

Clinical or bacteriologic recurrences may occur and are usually seen within two weeks after termination of therapy. Immediate repetition of therapy with larger doses or a combination of antibiotics is necessary in such cases. It is usually wise to restudy these cases bacteriologically in search of the cause of failure.

(b) Non-Streptococcal Endocarditis

As previously stated, in 10 per cent of the cases of bacterial endocarditis a wide variety of organisms may be found. Therapy in these cases will consist of the administration of an antibiotic or combination of antibiotics to which the particular organism is known to be the most sensitive.

Although penicillin is the drug of choice for staphylococcus, the high resistance of this organism calls for large doses (12 million units per day or more) and frequently should be given in combination with aureomycin. It is of interest that there appears to be an increasing staphylococcus resistance to penicillin. This is of serious concern to the therapist.²⁵ In 1946, Barber and associates found that 14.1 per cent of staphylococci examined were penicillin resistant.

24. Bloomfield, A. L.: The Present Status of Treatment of Subacute Bacterial Endocarditis, *Circulation* 2: 801 (Dec.) 1950.

25. Levinson, D. C.; Griffith, G. C., and Pearson, H. E.: Antibiotics in Management of Staphylococcus Endocarditis with Special Reference to Increasing Bacterial Resistance, *California Med.* 74: 167-170 (Mar.) 1951.

By June 1948, in the same hospital, the incidence had increased to 59 per cent.²⁶

Penicillin is the drug of choice in pneumococcal, meningococcal and gonococcal endocarditis.

Infections with influenzae and brucella organisms have responded when treated with a combination of streptomycin and aureomycin. The recommended amount of streptomycin is 1 gm. every 12 hours, together with aureomycin, 1 gm. every 6 hours. In most cases it is usually safer to determine the sensitivity of the organism to these antibiotics, or to the combination of the two. In this way a correct dosage may be determined.

3. Failure to Use a Combination of Antibiotics

The combined use of antibiotics is a much debated topic in this new field of therapeutics. The issue appears to be complicated and, as yet, not all the facts are known. However, a few principles have already emerged.

Certain combinations of antibiotics have a synergistic effect, while others have an antagonistic effect upon a specific organism. Combination of antibiotics may exert a synergistic effect on one type of organism, yet have an antagonistic effect on another type. Failure to use a combination of antibiotics when indicated, or using the wrong combination, will lead to therapeutic failure.

Volini and Kadison reported three cases of subacute bacterial endocarditis (one enterococcal, two viridans) in which there was no response to penicillin. However, a striking improvement was noted when bacitracin (6,000-10,000 units, three times a day) was added.²⁷

Almklov and Hansen reported a case of subacute bacterial endocarditis due to *C. diphtheria* that was apparently cured when streptomycin was used in addition to penicillin. The patient had failed to respond to

proper dosage of penicillin alone in spite of high in vitro sensitivity of the organism to this antibiotic.²⁸

The treatment of patients with enterococcal endocarditis using penicillin has been generally unsuccessful because of the low sensitivity of the organism. No doubt, a part of this failure is due also to the fact that this organism has a tendency to induce pyogenic and encapsulated lesions. The presence of usually severe heart damage also is a factor in the therapeutic failures in these patients. In an occasional case, arrest of infection has been achieved by prolonged treatment with massive doses of penicillin, i. e., 10-60 million units daily for six weeks. Streptomycin alone has not been effective in the treatment of enterococcal endocarditis. Robins and Tompsett reported their experiences with the combined use of penicillin and streptomycin in seven cases of enterococcal endocarditis. Five of their patients recovered. This represents a better result than could be expected with either agent alone.²⁹

Staphylococcus endocarditis may also be resistant to penicillin therapy. Spies and associates have reported a case in which the patient failed to respond either to penicillin or aureomycin alone, but recovered after combined therapy. In vitro studies demonstrated the synergistic action between the two antibiotics.³⁰

Friedberg and Bader report a case of *staphylococcus* endocarditis apparently cured with the aid of bacitracin after the disease had not been controlled by huge doses of penicillin, aureomycin and chloramphenicol. Penicillin and aureomycin were continued in combination with the bacitracin

26. Barber, J., and Rozwadowska-Dowzenka, M.: Infection by Penicillin Resistant *Staphylococci*, *Lancet* 2: 641 (Oct. 23) 48.

27. Volini, I. F., and Kadison, E. R.: Simultaneous Bacitracin and Penicillin Therapy in Subacute Bacterial Endocarditis. A Report on Three Cases, *Am. Pract. & Digest Treat.* 2: 13 (Jan.) 1951.

28. Almklov, J. R., and Hansen, A. E.: Successful Treatment of *C. Diphtheriae* Subacute Bacterial Endocarditis with Penicillin and Streptomycin, *Pediatrics* 5: 437 (Mar.) 1950.

29. Robbins, W. C., and Tompsett, R.: Treatment of Enterococcal Endocarditis and Bacteremia; Results of Combined Therapy with Penicillin and Streptomycin, *Am. J. Med.* 10: 278 (Mar.) 1951.

30. Spies, H. W., Dowling, H. F., Lepper, M. H., Wolfe, C. K., and Caldwell, E. R., Jr.: Aureomycin in the Treatment of Bacterial Endocarditis; Report of Nine Cases Together with a Study of the Synergistic Action of Aureomycin and Penicillin in One Case, *A. M. A. Arch. Int. Med.* 87: 66 (Jan.) 1951.

inasmuch as the *in vitro* studies indicated that this combination together with bacitracin was more effective against the causative staphylococcus in this case than bacitracin alone. The bacitracin was given in doses of 10,000 units administered intramuscularly every four hours.³¹

Synergistic actions have been demonstrated between penicillin and bacitracin in various types of infections.³² On the other hand, combination of penicillin with chloromycetin showed an antagonistic effect when administered in enterococcus infections. A similar antagonistic effect between penicillin and chloromycetin was also demonstrated in beta hemolytic streptococcus infections.³³ It has been shown also that aureomycin and penicillin have a synergistic effect upon the staphylococcus, but that aureomycin apparently interferes *in vitro* with the bactericidal action of penicillin against enterococci.³⁴ These are but a few examples of the complicated nature of the problem of antibiotic mixtures and serve to warn against indiscriminate combinations of antibiotics in the treatment of infections.

Attempts have been made to use the new antibiotics alone in the treatment of bacterial endocarditis. The available reports are scarce and somewhat contradictory. Kane and Finn reported 8 cases treated with aureomycin, of which 6 were failures (3 cases of enterococcal, 1 staphylococcal, 1 *E. coli* and one case of an unknown organism) and 2 recovered (both of very sensitive strains of viridans). In 5 cases treated with chloromycetin, 4 were failures (2 viridans, 1 *Staphylococcus aureus* endocarditis, and one with unknown organism) and one recovered (viridans).³⁵ Hughes successfully

treated 3 cases of subacute bacterial endocarditis (2 viridans and 1 hemolytic staphylococcus) with aureomycin after all had been treated with penicillin. Further study showed the organisms to be markedly resistant to penicillin.³⁶ Spies and his group reported 9 cases of endocarditis caused by alpha and beta streptococci, pneumococci and staphylococci, treated with aureomycin with 4 recoveries and 5 deaths.³⁰ A report of Levinson and associates includes 3 cases of staphylococcus endocarditis treated with aureomycin after they showed no response to penicillin therapy. In this series, two patients recovered and one died.²⁵

A search of the literature revealed that of the 37 cases treated with aureomycin alone, only 11 were classified as cured and in 8 cases treated with chloromycetin, only 2 recovered. One case reported treated with both aureomycin and chloromycetin died.

Arnold and Reeves recently reported on the use of terramycin in the treatment of subacute bacterial endocarditis. They had favorable results in a penicillin resistant case.³⁷

On the basis of these few reports, penicillin appears to be superior to the newer antibiotics in the treatment of bacterial endocarditis. This may be due not only to the greater sensitivity of the pathogens to this antibiotic but also to the fact that the newer antibiotics have only a bacteriostatic effect while penicillin has also a bactericidal effect upon the causative organisms. Nevertheless, aureomycin, chloromycetin and terramycin may prove to be of value when used in proper combinations with penicillin against resistant strains.

4. Failure to Recognize Mixed Infections.

In those cases of bacterial endocarditis where apparently adequate treatment failed to produce sterile blood cultures, mixed infections should be suspected as a possible cause of therapeutic failure. The case should be restudied from a bacteriologic standpoint and the antibiotic therapy corrected accord-

31. Friedberg, C. K., and Bader, M. E.: Acute Staphylococcal Endocarditis Cured with the Aid of Bacitracin, J. A. M. A. 147: 46 (Sept. 1) 1951.

32. Bachman, M. C.: In Vitro Studies on Possible Synergistic Action between Penicillin and Bacitracin, J. Clin. Investigation 28: 864, 1949.

33. Jawetz, E., and Speck, R. S.: Joint Action of Penicillin with Chloramphenicol on an Experimental Streptococcal Infection of Mice, Proc. Soc. Exper. Biol. & Med. 74: 93 (May) 1950.

34. Gunnison, J. B.; Coleman, V. R., and Jawetz, E.: Interference of Aureomycin and Terramycin with Action of Penicillin in Vitro, Proc. Soc. Exper. Biol. & Med. 75: 549 (Nov.) 1950.

35. Kane, L. W., and Finn, J. J., Jr.: The Treatment of Subacute Bacterial Endocarditis with Aureomycin and Chloromycetin, New England J. Med. 244: 623-628 (Apr. 26) 1951.

36. Hughes, S. O.: Subacute Bacterial Endocarditis Successfully Treated with Aureomycin, Am. J. Med. 10: 402 (Mar.) 1951.

37. Arnold, W. P., Jr., and Reeves, R. L.: Terramycin in the Treatment of Subacute Bacterial Endocarditis. Case Report, Antibiotics & Chemotherapy 1: 181 (June) 1951.

ing to the identity of the complicating organisms.

B. PENICILLIN THERAPY OF CARDIOVASCULAR SYPHILIS

The numerous controversial issues attached to the penicillin therapy of cardiovascular syphilis have been gradually clarified as time went on and more and more experience has been gained with this new type of therapy. It is only human to adhere for a while to accustomed and reliable methods when new discoveries call for the abandonment of these old practices. This probably explains why many of us still resort to the few introductory bismuth injections used so often to initiate the old method of treatment of syphilis.

From the numerous clinical data obtained, the following facts have been borne out in the therapy of cardiovascular syphilis.

Penicillin as procaine penicillin G in oil with 2 per cent aluminum monostearate is the therapeutic agent of choice in this disease. Several dosage schedules have been found to be effective but no agreement has been reached as to the minimal effective dose-time relationship. Until the results reported with the 4 weekly-injections, the single injection or similar methods have received further confirmation we feel that it is safer to use a more conservative schedule of therapy. A dose schedule of 600,000 units daily for 20 injections, or 1,200,000 units every other day for 10 injections will usually suffice.

The penicillin treatment of syphilitic heart disease is a safe procedure.^{38, 39, 40} It is unnecessary to start treatment with a small dose and increase it gradually or to introduce treatment with heavy metal injections. The occurrence of Herxheimer reactions has been over-emphasized, and cannot be prevented by beginning therapy with

small doses of penicillin. Apparently there is no contraindication to the use of penicillin in cardiovascular syphilis. Patients with congestive failure, angina pectoris, and healed coronary occlusion have been treated without untoward effect. The incidence of therapeutic paradox was not found clinically important. There has been evidence presented that penicillin stops the progress of cardiovascular syphilis. Therefore, it should be used in every case of the disease. However, it should be emphasized that treatment does not influence the serologic tests in this stage of the disease to any significant degree.

Although reports are appearing on an increasing scale concerning the antisyphilitic effect of aureomycin, chloromycetin and terramycin, these newer antibiotics are as yet far from being accepted for the treatment of syphilis.

SUMMARY

1. The introduction of antibiotics opened a new era in the prophylaxis and treatment of heart diseases.
2. The early and effective treatment of hemolytic streptococcal infections may prevent rheumatic fever.
3. Subjects who have had a previous attack of rheumatic fever may be protected from recurrent attacks and from subacute bacterial endocarditis by the administration of antibiotics.
4. Bacterial endocarditis, formerly thought to be a noncurable disease, has become the most curable disease of cardiology.
5. Early syphilis, adequately treated with a few penicillin injections, will substantially reduce the incidence of syphilitic heart disease.
6. Penicillin is safe and effective in the treatment of cardiovascular syphilis.

38. Coale, L. H.; Allen, M. S., and Delp, M. H.: Penicillin Treatment of Cardiovascular Syphilis, *J. Kansas M. Soc.* 51: 102 (Mar.) 1950.

39. Edeiken, J.; Ford, W. T., and Stokes, J. H.: Observations in Penicillin-Treated Cardiovascular Syphilis, *Pennsylvania M. J.* 54: 229 (Mar.) 1951.

40. Bruetsch, W. L.: Penicillin Therapy of Cardiovascular Syphilis with Large Total Dosage; Its Rationale Based on Histologic Studies, *Amer. J. Syph., Gonorr. & Ven. Dis.* 35: 252 (May) 1951.

No one can be sure when the primary tubercle is going to resolve into a harmless primary complex, though most of them do. Only time will tell whether persons with scattered, irregular, and perhaps somewhat loose calcifications will remain clinically well, though the majority of them do. A tuberculous infiltration is always of interest on the basis of health protection and is of clinical importance unless it has reached the favorable discrete character described above.—*Grover C. Bellinger, M. D., Bull. Nat. Tuberc. A., April 1951.*

ENTEROCOCCAL ENDOCARDITIS ASSOCIATED WITH
CARCINOMA OF THE SIGMOID

REPORT OF CASE

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and
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Subacute bacterial endocarditis may be caused by a variety of organisms. These are thought to gain access to the blood stream through one of several portals, the teeth and the respiratory tract being incriminated especially. The possibility of infection entering through ulcerations about an intestinal neoplasm was suggested by the following case. We believe it is of interest also because of the difficulty of establishing the location of the tumor, the type of bacteria involved, and the apparent cure for over 21 months in an elderly (74 year-old) patient.

CASE REPORT

1st Admission: This 74 year-old white housewife was first admitted to the hospital on the 27th of October, 1949, because of complaints of passing bright red blood per rectum intermittently for two months. Since her illness began, daily bowel movements increased from one to two or three. During the first month, the stools were frequently dark and occasionally black. Bright red blood gradually became more frequent and large black clots were passed. On two or three occasions she had an unexplained fever up to 102°F. For several years there had been gaseous distention, epigastric fullness, and discomfort postprandially. Fatty foods often caused eructations and occasionally regurgitation of food. The past history was significant in that for many years she had had frequent sore throats and attacks of tonsillitis. Tonsils were finally removed at age 64. At age 26 she had a right inguinal herniorrhaphy. She had an attack of yellow fever at the age of twenty-seven years. Dyspnea and precordial discomfort on exertion had been present for five years. Her mother died at the age of 75 with heart failure, her father of pneumonia at the age of 86 following an automobile accident. A paternal aunt died with a cancer of the

breast at the age of 75; a paternal uncle with a cancer of the neck at the age of 74; and one brother with some type of intestinal malignancy at the age of 75. She had been married for fifty years. Her husband was 81; he had hypertension and angina. There had been five pregnancies; 4 children were living and in good health; she had a miscarriage during the time she had yellow fever.

Physical examination showed a well developed, fairly well nourished, but somewhat pallid white female of about the stated age of 74, who appeared to be chronically but not acutely ill. Temperature was 99°F., pulse was 80 and regular, blood pressure was 150/80. The mucous membranes were pale. Funduscopic examination disclosed tortuosity of the retinal vessels, but no hemorrhages nor exudates. All teeth were absent; there were two well-fitted plates. The thyroid gland was not enlarged. The lungs were entirely clear. The point of maximal impulse was 9.5 cm. lateral to the midline in the fifth left interspace; no thrills could be felt. Precordial dullness extended to the point of maximal impulse but otherwise was within normal limits. There was a loud, harsh systolic murmur in the mitral area. This murmur was most marked in the latter phase of systole and was well heard over the entire precordium. The mitral first sound was moderately accentuated. No diastolic murmurs could be heard. P_2 slightly exceeded A_2 . Abdominal examination revealed mild tenderness over both lower quadrants, but there were no palpable masses nor tender localized areas. There was a firm, well healed, right inguinal herniorrhaphy scar. Small skin tags were noted about the anus. Laboratory studies: Urinalysis showed a specific gravity of 1.010, 10-12 leukocytes per high power field (uncatheterized specimen); there was no albumin nor sugar. Complete blood count: red blood count was 3.38 million with 61 per cent hemoglobin; white blood count was 10,900

with 79 per cent polymorphonuclear leucocytes (including two stabs), 19 lymphocytes, 1 monocyte, and 1 eosinophile. An electrocardiogram taken prior to hospitalization showed an occasional premature ventricular contraction but no other abnormalities.

A tentative diagnosis was carcinoma of the colon, probably involving the descending colon or sigmoid. Complete gastrointestinal survey by x-ray was reported to be normal. Proctoscopic and sigmoidoscopic examinations showed blood-tinged mucus in the lumen, but no site of bleeding could be found. Repetition of the x-rays of the small bowel serially was once more reported to be normal, but a second barium enema with contrast air studies showed two small polyps measuring approximately 1 cm. in diameter in the descending colon approximately two inches below the crest of the left ilium. A filling defect was seen in the sigmoid just below the level of the polyps. On the air study, this defect had the appearance of a pedunculated carcinoma, apparently on the lateral wall of the sigmoid colon. (See Figures 1, 2, and 3.)

While in the hospital, the patient con-

tinued to pass varying amounts of blood, often with clots and mucus. Occasionally the stools were composed almost entirely



Fig. 2. Preoperative barium x-ray study—evacuation film with air injection. Arrow shows site of tumor.



Fig. 1. Preoperative barium study of colon. Arrow shows filling defect at site of tumor of sigmoid.



Fig. 3. Same as Fig. 2. Arrow shows polyp in addition to tumor.

of blood of a raspberry jam color with some black clots. On the second of November, a small subcutaneous hemorrhage was observed under the medial aspect of the right eye. The skin was carefully observed, but no other hemorrhagic areas were noted. A Rumpel-Leede test for capillary fragility was negative. Hematologic studies showed a red blood count of 3,610,000, with 70 per cent hemoglobin. The white blood count was 10,050 with 72 per cent polymorphonuclear leucocytes, including 3 stabs and 1 juvenile, 26 per cent lymphocytes, 1 eosinophile and 1 basophile. The clotting time was 3 minutes and bleeding time 1 minute and 55 seconds. Platelets numbered 250,000. Multiple agglutination test was reported positive for typhoid "H" through dilution of 1:160 and for paratyphoid B 1:160. Three stool cultures on November 3, 4, and 5 were negative for any organism of the typhoid group. On the 7th of November, the patient underwent surgery.

An exploratory laparotomy was performed (by Dr. J. M. Mason, III), with resection of the portion of the sigmoid containing the tumor and polyp. (See Figure 4.) An end-to-end anastomosis was per-



Fig. 4. Photograph of specimen showing tumor and polyp.

formed. The patient's postoperative course was smooth. The wound healed per primam and the anastomosis functioned without difficulty.

The pathology report on the specimen was: 1. adenocarcinoma of sigmoid colon, grade III with deep extension into the wall of the bowel and metastatic extension to the adjacent lymph nodes; 2. benign adenomatous polyp.

Following the surgery, the patient had frequent periods of depression. Her oral temperature had varied from normal to 100.8°F. prior to surgery and did not exceed 99.8°F. until the 7th day when it was 100°F. and again on the 16th postoperative day when a single reading of 100.2°F. was recorded. She was discharged on the 26th of November, 1949, the 17th postoperative day, after a total of 28 days in the hospital.

2nd Admission: Patient did not do well at home and developed nausea and vomiting, chilliness and unexplained fever of 100 to 101 degrees. On December 1, 1949, four days after discharge, she was readmitted to the hospital. No new physical findings were observed. Temperature was normal on admission and during 10 days it was never elevated over 99.2°F. A catheterized specimen of urine showed numerous red cells and 4 to 6 pus cells per high power field, with a rare finely granular cast; there was no albumin; specific gravity was 1.020; urinalysis was positive for sugar (patient had just received 1 liter of glucose). She was given 0.5 grams of dihydrostreptomycin every 12 hours for a total of 5 days. During the course of this antibiotic, the temperature became normal and remained so for 5 days. Patient generally improved and was discharged on the 10th of December, 1949.

3rd Admission: While at home, the patient again developed slight fever and within a week she also noticed petechiae and edema of her legs. The petechiae gradually increased in number, the fever persisted, and the general condition worsened. Endocarditis was suspected and one blood culture was taken on December 15th. This culture was negative. On the 30th of December, 1949, the patient was readmitted to the hospital. Physical examination disclosed no new findings except the petechiae and edema. Blood cultures were taken twice daily for the first three days. On the 3rd of January, 1950, the first positive culture was reported; subsequently, all of the remaining five cultures showed bacteria. The laboratory reported the organism to be a gamma streptococcus classified as *S. fecalis*. This organism was found to be highly sensitive to penicillin (inhibited by .003 units per cc.), but not to streptomycin or sulfadiazine.

The experience of Roston et al.,¹ that the depot type of penicillin gave satisfactory results, led us to the use of procaine penicillin. With 300 thousand units per cc. Roston and his co-workers found levels of 0.6 units per cc. after 12 hours. To heighten the blood levels in our case, we decided to give 1 million units of penicillin S-R (250 thousand units of crystalline penicillin G and 750 thousand units of procaine penicillin G) every 12 hours. The patient improved rapidly. (See Figure 5.) No new petechial

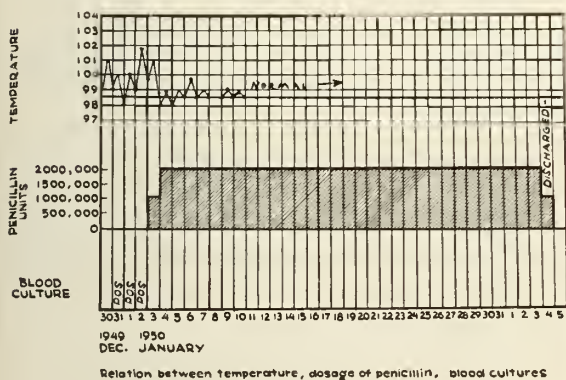


Fig. 5.

areas were observed and those present on admission gradually faded and disappeared. Temperature became normal within 48 hours after the penicillin was started and no further elevation occurred during the entire hospitalization. Patient complained occasionally of pain at the sites of the injections of penicillin. These areas of injection in the buttocks were systematically rotated about the upper lateral quadrants and, despite moderate discomfort, the patient tolerated the intramuscular injections well. During the course of penicillin therapy, on the 24th of January, 1950, the patient developed coryzal symptoms which lasted for 5 days and cleared up uneventfully. After 31 days of penicillin, the patient was seen in consultation by Dr. Edgar G. Givhan, Jr. and it was decided that the antibiotic could be discontinued safely. Patient received the last million units of penicillin on the 24th of January, 1950, making a total of 64 million units. She was discharged from the hospital on the 24th of January, 1950.

1. Roston, E. H., and Stollerman, G. H.: Procaine Penicillin in the Treatment of Subacute Bacterial Endocarditis, *Am. Prac.* 4: 102-106, 1949.

Subsequent follow-up examinations of the patient showed no evidence of recurrence of bacteremia. The cardiac status has remained unchanged. A barium enema on the 5th of December, 1950 showed no evidence of recurrence of the malignancy and the anastomosis in the sigmoid functioned well. (See Figure 6.)



Fig. 6. Postoperative barium x-ray study. Arrow indicates site of anastomosis.

DISCUSSION

In cases of endocarditis it is extremely important to determine the portal of entry of organisms into the blood stream. Individuals with valvular lesions are all potential victims of endocarditis. Knowledge of the mechanism of infections may prevent great suffering and prolong life. Unfortunately, in many instances it seems impossible to find the source of the bacteremia. Gorlin et al.,² in a series of 38 cases with 2 relapses, found that subacute bacterial endocarditis followed dental extractions or major fillings in 38 per cent of these cases; in 15 per cent the disease followed an acute upper respiratory infection, furuncles, pye-

2. Gorlin, R.; Favours, C. B., and Emery, F. J.: Long-Term Follow-Up Study of Penicillin-Treated Subacute Bacterial Endocarditis, *New England J. Med.* 242: 995-1001 (June 29) 1950.

litis, cystitis or appendicitis. The cause of the other 47 per cent could not be determined. In a study of seventy cases by Correll et al.³ it was possible to get a satisfactory history of the presence or absence of predisposing illness in 60 cases. Of these 60 cases, 30 had antecedent disease—20 had sore throats, 5 had recent dental infections, 3 had followed spontaneous delivery, and 2 had pelvic surgery. Studying 18 cases, Ward et al.⁴ found that 3 had recent dental extractions and 9 others had dental infections. Loewe and his co-workers⁵ found in 6 cases of enterococcal endocarditis that 2 followed urinary tract manipulation (one a transurethral resection, the other urethral dilatation under general anaesthesia); a 3rd case was associated with an abscess complicating a fistula-in-ano; in 3 there was no recognizable source of infection. A case of *Escherichia coli* endocarditis reported by Hoffman et al.⁶ was apparently incurred at the time of operation on a diseased gallbladder. Wallace⁷ studied a case of *Aerobacter aerogenes* endocarditis which followed cystoscopic examination and meatotomy. Studying cases of endocarditis in 18 elderly patients, Zeman⁸ found associated lesions in only 3 cases—bilateral nephrolithiasis, pyonephrosis with biliary lithiasis, and questionably healed osteomyelitis of the jaw.

In a review of the literature for the past 30 years, the authors could find no definite evidence of the association of subacute bacterial endocarditis and carcinoma of the

large bowel. We are unable to prove that such was positively true in the present case, and the association of an intestinal type of organism and a sigmoidal carcinoma may have been purely coincidental. However, the endocarditis and the malignancy did appear to develop concurrently and a causal relationship is suggested.

SUMMARY AND CONCLUSION

1. A case is presented of enterococcal endocarditis associated with carcinoma of the sigmoid.

2. A cure for over 21 months was effected by surgical resection of the carcinoma and use of 64 million units of penicillin for the endocarditis.

3. Brief presentation is made of the potential portals of entry of the infecting organisms in subacute bacterial endocarditis.

4. Causal relationship between carcinoma of the sigmoid and enterococcal endocarditis is suggested.

PEDIATRIC CASE REPORTS

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Benjamin P. Clark, M. D.

The definitive diagnosis of surgical lesions of the gastro-intestinal tract in the newborn is often extremely accurate if intelligent use of the x-ray is made. More often than not the use of contrast media, other than the normal gaseous content of the bowel, is not necessary. Such media should be used only if diagnosis cannot be made without their use. On the other hand, there are cases where definitive diagnosis must await an exploratory laparotomy and such is the case presented here.

This 17 day old male infant was admitted to the hospital about 8 p. m. November 24, 1949 because of vomiting and the passage of bloody stools. This was the second admission of this infant, the first having been at the age of 3 days when the discharge diagnosis had been "meconium ileus." The baby had been well during the period of time between the two admissions.

On the admission examination the abdo-

3. Correll, H. L.; Lubitz, J. M., and Lindert, M. C. F.: Bacterial Endocarditis: Clinico-Pathologic Studies of Untreated, Treated and Cured Patients, *Ann. Int. Med.* 35: 45-58, 1951.

4. Ward, G. E. S.; Meanock, R. I.; Selbie, F. R., and Simon, R. D.: Treatment of Subacute Bacterial Endocarditis by Penicillin: Preliminary Report on 18 Cases, *Brit. M. J.* 1: 383-386, 1946.

5. Loewe, Leo; Cendel, Samuel, and Eiber, H. B.: Therapy of Subacute Enterococcus (*Streptococcus Fecalis*) Endocarditis, *Ann. Int. Med.* 34: 717-736, 1951.

6. Hoffman, M. S.; Wellman, W. E., and Sayre, G. P.: *Escherichia Coli* Endocarditis: Report of a Case, *Proc. Staff Meet., Mayo Clinic* 26: 1-8, 1951.

7. Wallace, C. S.: Bacterial Endocarditis with Emphasis on the *Escherichia-Aerobacter* Group as a Causative Agent: Report of a Fatal Case, *Ann. Int. Med.* 34: 1463-1472, 1951.

8. Zeman, F. D.: Subacute Bacterial Endocarditis in the Aged, *Am. Heart J.* 29: 661-684, 1945.

men was found to be rigid and there were no palpable masses. A small amount of dark red "currant jelly" material was passed from the rectum following the examining finger. It appeared that the abdomen was more tender in the upper right quadrant. The hemogram was normal except that there were 64 per cent neutrophils.

The infant was carried to the operating room with a preoperative diagnosis of intussusception. When the abdomen was opened a moderate amount of milky fluid was free in the abdominal cavity. About 3 feet of the small intestine in the mid-portion were dark and distended. No areas of obstruction were found in either the colon or the small intestine. The wound was closed without drainage.

The infant expired approximately 20 hours postoperative. During this 20-hour period there was almost constant cyanosis, much apnea, and frequent vomiting of sero-sanguineous material. Oxygen was used continuously, one clysis was given, and stimulants were given at intervals. An autopsy was done.

The final pathological diagnosis was "probable" volvulus of the small intestine and interstitial lobular pneumonia. In addition, there was some atelectasis, acute and subacute mesenteric lymphadenitis, and diffuse hemorrhage throughout the lungs.

It appears that the intestinal obstruction was due to volvulus because of the configuration of the small intestine with a localized segment dilated with a constriction at each end of the dilatation. There was obstruction to the veins and possibly the arterioles. Preoperative diagnosis of volvulus cannot often be made in the very young infant. Of course, one realizes that one has an acute surgical abdomen and then must usually await the surgeon's exploration for an exact diagnosis. Surgical correction of a volvulus is not always possible although every attempt should be made in suitable cases.

There is much in the epidemiology of tuberculosis which we do not understand, and the disease has clinical aspects which we cannot explain. Its treatment is no more static now than it was thirty years ago, and it is just as true today as it was then that everything that is new is not necessarily true or good.—Charles Cameron, M. D., *The Lancet* (London), April 14, 1951.

Duodenal Ulcers—Although the criteria for surgical intervention in the treatment of duodenal ulcer have become pretty well standardized, there is still a wide difference of opinion among surgeons as to the value of specific operative procedures. In general three main types of surgical approach are used:

1. The more conservative procedures such as gastroenterostomy and pyloroplasty. Although neither of these operations is widely used alone as a definitive procedure today, there is still a place for each. In older patients with simple pyloric stenosis from the scar of an old, burned-out ulcer, either of these procedures is satisfactory. This type of patient is often in rather poor general condition, with a relatively low gastric acidity. The operation can be done easily and will carry a low mortality rate in comparison with a more formidable one. Under these conditions good results can be expected.

2. Gastric resection with some form of gastrojejunostomy, perhaps the most widely used operation at present for radical cure of duodenal ulcer. There is no question that this procedure when carried out in competent hands, with the resection of approximately two-thirds of the stomach and that portion of the duodenum containing the ulcer when possible, will accomplish a high percentage of cures. It will be noted that I use the term "when possible." Some surgeons believe that they can resect every stomach, no matter where the ulcer may be located or how much induration and inflammatory reaction may be present. The vast majority realize, however, that in the case of a penetrating ulcer on the posterior wall, perhaps near the ampulla of Vater and extending into the pancreas, either the ulcer must be left behind or some other type of operation must be performed.

3. Resection of the vagus nerves for treatment of peptic ulcer. When Dragstedt in 1943 reintroduced and popularized this operative procedure, he immediately started a controversy. The debate among surgeons as to the efficacy of this procedure still waxes hot, but enough time has elapsed so that a proper perspective has begun to evolve.

After the vagi have been severed at the level of the lower end of the esophagus, in nearly every case a change in the gastric physiology occurs; there is a drop in the hydrochloric acid content of the gastric juice, as well as a diminution in the total quantity secreted in a twenty-four hour period. Also, as a rule, with marked atony of the musculature of the stomach a lessening of the peristaltic activity is noted. Because of the sequelae just mentioned, the emptying time of the stomach is lengthened materially. Realizing this latter fact, Dragstedt and other surgeons have combined vagotomy with some type of drainage of the stomach in the treatment of duodenal ulcer. A posterior gastroenterostomy at the most dependent portion of the greater curvature serves well. A pyloroplasty also will give adequate drainage and is preferred by some surgeons.—Finney, *Texas State J. Med.*, Nov. '51.

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BARBITURATES

“Let us have a look at some of the methods commonly employed in the treatment of emotional difficulties. I have not seen the latest figures on the sale of barbiturates, but as I recall those I last saw it struck me that even in those states where the sale was restricted to patients with physicians’ prescriptions, the amount sold was colossal. The only reason sales can reach such proportions is that the symptoms controlled by barbiturates appear so often among the patients you treat.

“Among those for whom barbiturates are prescribed is first the patient with insomnia. The one who is tired all day and restless all night almost inevitably comes away from his physician with some barbiturate. The physician knows that the treatment is only symptomatic, but he has done whatever he could to rule out organic pathology, and beyond that he feels that there is nothing left for him to do but to make his patient comfortable. Since most of these conditions are chronic—and I refer here particularly to the chronic ones—the physician who prescribes barbiturates to such a patient has started him on a long term program of taking this medication, which, as even the labels on bottles indicate, “may be habit-forming.” I leave it to others to point out the possible pharmacological effects of continued use of barbiturates. What I am better acquainted with are the clinical effects, and these are such as to give conscientious physicians cause for concern about the widespread use of these drugs. The course is so regular that it can generally be charted in advance. The patient takes the prescribed dose and gets relief. Several weeks later the effectiveness of the original dose has worn off, and he is getting no more sleep with it than he was getting before starting medication. Either on the suggestion of the physician, or without asking for such advice, he keeps increasing the dose, always with the result that the increased dose at first brings relief, only to have it wear off in a shorter or longer period of time. At last he ends up taking as much of the drug as he dares, or as much as his physician will allow him, or as much as he can take without feeling drowsy all the next day. What has happened to his sleep in the meantime? He still sleeps just about as little as he slept

before he started taking barbiturates. Then he decides to go to another physician who again puts him through all the clinical tests, which again reveal no organic etiology. When that is over, the patient begins a new course with a different sedative. But he's only on a merry-go-round—always on the way back to where he started from, and getting very dizzy in the process.

"There is one other group of patients treated to a steady diet of barbiturates. They are the ones with persistent anxiety symptoms, either appearing by themselves, or accompanying somatic disorders. They are the patients who are restless, who complain of jitters and cannot relax. They perspire easily, get flushed, have a rapid heartbeat, and maintain a constant attitude of tension. They are the ones who are suspected of having hyperthyroidism without having it, the ones who have innumerable gastro-intestinal series, without any pathology ever being discovered. They too respond well to barbiturate medication in the early stages, but a steady diet of these drugs results as badly for them as it does for the insomniac, the only difference being that the ill-effects here show a somewhat greater variability. It is evident that even in the control of superficial symptomatology, continuous use of barbiturates can hardly be justified. If one looks just a little deeper, there is even less excuse for their being used as extensively as they are. The same reasoning applies here as applies to the use of potent analgesics and opiates for the control of pain. Easy resort to these drugs makes physicians too casual and too negligent in their efforts at discovering and correcting the basic pathology. It is known well enough that the premature use of morphine can lead to the neglect and further development of an otherwise-correctible surgical condition. In like manner it behooves the medical practitioner to wonder what it is he is shielding, what he is allowing to develop further, when he starts dosing his patient with barbiturates, which have only the effect of enabling the patient to tolerate a condition which otherwise might be corrected. The patient with an anxiety state who is repeatedly dosed with barbiturates is not being relieved of his anxiety. The outward manifestations are being covered, while the basic tension mounts up, while the etiological factors continue to

grow, and while new symptoms develop which will be more damaging and harder to treat. There are, of course, instances in which even the continued use of opiates is justified, those in which the condition is hopeless, and physicians wish to make the patients as comfortable as possible. But we must make sure *before* we resort to this kind of medication that the condition is really hopeless. That, precisely, is what the medical profession has not done in those emotional ills in which sedatives are overused. Not only are many of these conditions less hopeless than they have been considered, but the well-informed and conscientious physician today can treat many of them in his own office, without resort to help by specialists, and without barbiturates.

"I do not want to leave the impression that in my opinion there is no legitimate place for the use of barbiturates. There are many instances where the impact of an acute crisis can be materially lessened if the patient's reactivity is diminished by the use of sedatives. There are others in which the artificial induction of several nights' sleep can be of tremendous help in withstanding a physical illness, in living through a crisis, or in gathering strength for the solution of some difficult problem. There is a group of convulsive disorders in which the thoughtful and prolonged use of sedation constitutes the major therapy. But aside from these conditions, the continued use of sedation is something which on its face is suspect, and in the vast majority of instances is bad medicine."

The above is taken from the excellent and thought-provoking article by Barhash.¹ Lack of space precludes reference to more than this one aspect of Barhash's contribution.

Laws regulating the sale of the barbiturates are being passed rather slowly and, it seems, enforced none too well or not at all. There are far too many individuals who demand excessive and prolonged sedation and who are determined to receive as much of the various sedatives as they crave or think that they should have. And dealing with these people constitutes a problem of in-

1. Barhash, A. Z.: *Psychiatric Techniques in Medical Practice*, J. A. M. A. 146: 1584 (August 25) 1951.

creasing proportions. The harassed practitioner who knows better than to prescribe sedatives excessively is frequently in an unenviable position when so many patients demand promiscuous sedation and will not be satisfied with anything else. All practicing physicians will do well to heed Barhash's most sensible admonitions. And, finally, if all who write prescriptions for sedatives will mark them "non-refill," a great forward step will have been taken, drug addiction will most likely decline sharply, and a vast amount of misery and suffering will thus be avoided.

PHYSICIAN-PATIENT RELATIONSHIP

(J. A. M. A., Nov. 10, 1951)

In the past few years, one of the most important public relations accomplishments of the medical profession has been the establishment of grievance committees. Physicians have come to realize that patients must have an outlet for their just complaints, and that the profession must take the lead in ferreting out doctors who refuse to abide by the Code of Ethics.

Grievance committees have done another thing for the profession. In community after community they have provided a listening post for public relations problems. When complaints over a period of time are tabulated, it is possible to determine trends and to seek ways to prevent recurrence of such grievances. Soon after the committees began functioning, it became apparent that the vast majority of patients' grievances against their doctors stemmed from one thing—misunderstanding. Time and time again patients had gone to a medical society grievance committee complaining of overcharging, only to find that a heart to heart talk with their physician would have settled the matter to their satisfaction. Often the patient complained about the medical care he had received only because he did not understand the services rendered.

It has become obvious that the public relations problem of misunderstanding can be solved only in the doctor's office. Patients must be encouraged to talk over with their doctor any questions they might have regarding his services or his fees.

This encouragement can be given with a

simple public relations aid which the American Medical Association is making available as a service to its members. It is an attractive office plaque which reads:

To All My Patients . . .

I invite you to discuss frankly with me any questions regarding my services or my fees. The best medical service is based on a friendly mutual understanding between doctor and patient.

The new plaque can increase understanding for every practicing physician. Given a prominent place on physicians' desks or waiting room walls, it will show that America's doctors are sincerely interested in providing the best of medical service, the kind of service that comes only from friendly, mutual understanding.

SPECIAL NOTICE

STUDY OF MATERNAL DEATHS

Throughout 1952 the State Department of Public Health and the Medical Association of the State of Alabama (Committee on Maternal and Child Health) will sponsor and conduct a case study of each maternal death in Alabama. Twenty six obstetricians in seven state areas will make personal case studies of maternal deaths. Case study forms so completed will then be referred to a central committee for review and evaluation. This committee will be composed of six recognized obstetricians. All marks of case identification (patient, physician, and hospital) will be removed from case records before they are referred to the central committee.

Data and conclusions from such a comprehensive analysis should be most interesting and informative. All County Medical Societies and all Alabama hospitals have been informed of this survey. Wholehearted cooperation will greatly simplify the accomplishment of this rather unusual undertaking.

T. Brannon Hubbard, M. D.

President of the Association

D. G. Gill, M. D.

State Health Officer

T. M. Boulware, M. D.

Chairman, State Committee

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

JUST LIFTED

W. A. Dozier, Jr.

Director of Public Relations

It is not very often that this column is dedicated to quoting other people. Recently, however, two items have appeared which bear very forcefully on many things that have been said in one way or another by your Association leaders in the last few years. Doubtlessly each of you could add to the following lists, but as stated they seem to cover the situation pretty well.

A recent News Letter of the Massachusetts Medical Society carried the following enumeration of "Ten Ways to Kill an Association."

1. Don't come to the meetings.
2. If you do, come late.
3. If the weather doesn't suit you, don't think of coming.
4. If you do not attend a meeting, find fault with the officers and members.
5. Never accept an office, as it is easier to criticize than do things.
6. Nevertheless, get annoyed if you are not appointed to a committee. If you are appointed, don't attend the committee meetings.
7. If asked by the Chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting tell everyone how things should have been done.
8. Do nothing more than is absolutely necessary. When other members roll up their sleeves and unselfishly use their ability to help things along, howl that the Association is run by a "clique."
9. Hold back your dues as long as possible—better still don't pay at all.
10. Don't bother about getting new members, but if you do, be sure they are grouches like yourself. (Age Publications Ltd., Toronto.)

Another matter about which we hear so much both within and outside of the profession is the handling of fees. The Westchester County Medical Society of New York through its Medical Economic Bureau lists the following "don'ts" in solving fee difficulties.

1. *DON'T* tell a patient what another doctor's fee should be. ("Another doctor told me it shouldn't have been higher than X dollars.")
2. *DON'T* fail to itemize a bill when clarification of charges is needed. (People want to know exactly what they're paying for.)
3. *DON'T* quote fees for a surgical procedure in just one type of hospital accommodation if it would be higher in another. (Semiprivate vs. private room fee levels.)
4. *DON'T* fail to obtain consent for consultation whenever possible and make it clear there will be a separate bill from the consultant.
5. *DON'T* fail to make it clear to the patient that there will be a separate bill from the Anesthesiologist, Radiologist, or Pathologist, where this is the case.
6. *DON'T* refer accounts to commercial agencies unless you are absolutely sure of the methods used.

Everything in the two listings above has been said by one of your Association leaders in the last two or three years. Perhaps it behooves us to look at these things in the light that they have been said by others as well as our own leaders. We are not unique in our problems and we must continue to seek correct answers.

The personal attitudes of the patient are important in the treatment of any disease in which the patient's cooperation must be elicited. The more chronic the illness, the greater importance these personal factors assume. Osler summed up the situation in tuberculosis when he said, "It is just as important to know what is in a man's head as what is in his chest if you want to predict the outcome of his pulmonary tuberculosis." —Jerome Hartz, M. D., *Pub. Health Reports*, October 6, 1950.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

GREATER OPTIMISM IN PNEUMONIA

An Alabamian was talking to a friend some time ago about his son, then in the Army. The youngster had been sick, he said. "Fortunately," he added, "it's only pneumonia."

Remembering pneumonia's long-time reputation as a big-scale killer and one of the most dreaded of human illnesses, the other person was surprised to hear his friend speak of it so lightly. To him, to be told that a case of illness was nothing serious because "it's just pneumonia" was a strange experience. Being thankful that a disease was "just pneumonia" to him was like being glad that you are "only \$10,000 in debt" or had "only" lost your job or had "only" been sent to the penitentiary for a year or two.

Perhaps the father of that young serviceman was unjustifiably optimistic. Perhaps he had too rosy an opinion of the progress made in recent years in the mastery of this ancient killer. Perhaps—quite probably—he would have been justified in being quite concerned about his son fighting a case of pneumonia in a distant army hospital, even with modern weapons. But that Alabama father was merely reflecting the newer optimism regarding the outlook for this form of illness. There is no question about its being a less serious disease danger than it used to be. It is quite certain, in fact, that modern medical science has placed in the hands of your doctor several important and powerful agencies for its treatment. It is a proven fact that he can discuss the average uncomplicated pneumonia case with vastly greater cheerfulness than doctors discussed their pneumonia cases a generation or two ago. In brief, pneumonia is being handled much more effectively nowadays than it ever was handled before.

That is true here in Alabama. It is also true in other states. It is true in other parts

of the world. All humanity is the beneficiary.

Let us turn briefly to the latest vital statistics reports to see how true that really is as far as this state is concerned. The latest available are for 1950 and are provisional. (That means they may have to be corrected slightly when the final tabulation has been completed.) But here is what they show:

Only 1,049 Alabamians died from pneumonia (all forms) in 1950. In 1940 (ten years earlier) Alabama pneumonia deaths totaled 1,694, or more than 50 per cent more than in 1950. And that decline, remember, was in the face of a sharp increase in population. The 1950 total was considerably less than half the 2,277 pneumonia deaths reported in 1930. The 1920 total was even higher—2,719. We are fortunate indeed that so many more Alabamians than there were in 1920 contributed so many fewer pneumonia deaths to the vital statistics records.

But let us not let our optimism run away with us. Pneumonia is not yet completely conquered. Make no mistake about that. Pneumonia deaths in this state were still occurring in 1950 at an average rate of about one every eight hours. (To express it somewhat differently, some Alabamian died from this single disease, on an average, between the time the average Alabama workman started to work and the time he punched his time clock at the end of his eight-hour stint.) In spite of the great gains that have been made, only three other forms of illness—heart disease, brain hemorrhage and cancer—killed more Alabamians in 1950 than this one did. (Accidents of all kinds also outranked pneumonia as a cause of death.)

Like a number of other diseases, pneumonia is largely, but not altogether, a seasonal form of illness. That is, it is more fatal at certain times of the year than at others. As in the case of other respiratory diseases, such as the common cold and influenza, you are much more likely to contract it in the late fall, the winter and the early spring than at any other time of the year. But remember, there is not a day or

indeed a moment when you can say truthfully that you are entirely immune to it. Cases and deaths are reported in July and August as well as in December and January. But there are fewer of them.

Your doctor learned long ago that it is unsafe to diagnose a disease—this one or any other—from symptoms alone. (Fortunately, he has other and more scientific means of doing so.) But the average layman has little or nothing else but symptoms to guide him. So he should know enough about pneumonia's symptoms to make him at least suspect this disease when those symptoms appear. The person who has developed a pneumonia-consciousness is in a better position to begin treatment early than one who never gives a thought to this disease and knows nothing of its symptoms. So let us briefly consider the warning signals normally thrown out by this form of illness.

Perhaps the most characteristic pneumonia symptom is a chill. It is usually the kind that causes the victim to shake violently. It may be a severe or mild one. There is usually a sharp rise in the body temperature. In many cases, the thermometer reading is as high as 102 degrees Fahrenheit, or even higher. Comparatively few pneumonia patients escape pleurisy. (For the benefit of the uninitiated, pleurisy is a sharp, "catching" pain that hurts steadily most of the time and becomes all but unbearable whenever the victim coughs or breathes deeply.) The sputum assumes a "rusty" appearance. (Someone has called it a "prune juice" appearance.) Children are less likely to have that "prune juice" sputum than adults. In some cases, but not all, it is streaked with blood.

Pleurisy is sometimes present in the early stages of the disease. In other cases, it waits a while to appear. And some cases do not have it at all. And, of course, there are various stages of severity in pleurisy. It may plague the patient for practically the entire duration of his illness. Or it may recur in a "hit and run" sort of way. Or it may trouble him in the beginning and leave him alone after that.

The symptoms that have been mentioned do not quite complete the list. The victim usually develops a troublesome and all but uncontrollable cough. Breathing is unnatu-

ral and often even labored. The physical fatigue that normally comes with the disease is often all but overpowering. The slightest exertion proves extremely tiring. Some pneumonia patients become delirious.

Pneumonia does not follow any particular pattern of onset. It may approach in slow, stealthy fashion like the proverbial thief in the night. Or it may strike the victim down with sudden and violent force. Many people develop pneumonia after suffering for several days from a common cold or influenza. Bronchitis is an occasional forerunner of the form of illness we are considering. On the other hand, it may strike like the proverbial bolt from the blue, when the victim considers himself in excellent health.

It is unfortunate that pneumonia's early symptoms are sometimes so mild. For they tend to give the victim an unjustified sense of safety. Occasionally they arouse such little concern that the victim continues about his regular duties. In most instances, however, this period of false security is short-lived. In a short time those symptoms become too marked to be ignored, and the person who knows anything much about pneumonia would find it hard to misinterpret them. The temperature, which probably has been uncomfortably high for a while, goes higher and higher. That tickling in the throat that could be at least partly curbed by will-power becomes entirely uncontrollable, and the patient coughs and coughs. That shortness of breath becomes more uncomfortable. The sputum tends to stick to the patient's lips and mouth. It has the semi-liquid consistency of soft ice cream, rather than the flowing liquidity of milk or cream. In many cases, but not all, the abdomen has an uncomfortable, "blown-up" feeling caused by gas. That sense of physical exhaustion, which was bad enough before, becomes worse, and almost any kind of movement is too much. Even a person who is normally a hearty eater often becomes virtually a non-eater, food of any kind being as repulsive to him as bad-tasting medicine to a rebellious child. When this happens, the physician in charge usually resorts to forced feeding of liquids. Unless some measure of this kind is employed, the mouth and tongue become desert-dry and over-parched.

At this stage, death may occur at almost any time. If a brighter fate awaits the victim, he will experience these troublesome symptoms for a period of uncertain length, perhaps as short as six days or a week, perhaps as long as ten days or even longer.

Recovery may take either of two forms, described by words that sound somewhat alike—crisis and lysis.

Let us consider the crisis first.

Its name may give you an incorrect idea of what it is. We normally think of crisis as a time of peril or threatened disaster. For example, the Battle of Britain was considered a crisis in the Second World War. The War Between the States is said to have reached a crisis at the Battle of Gettysburg. A business man reaches a crisis in his business affairs when failure or bankruptcy seems to stare him in the face. But crisis in pneumonia is something else. It is the turning point toward recovery, a sudden change for the better. It usually comes unexpectedly and with startling force. Someone has said of it that it is "so dramatic as to seem miraculous." The temperature drops sharply, often being back to normal in a matter of four to six hours. The cough subsides. So does the shortness of breath. Restlessness is succeeded by calm and repose. The patient often drops off into quiet sleep. There is no sudden return of physical strength, but the process of regaining it usually starts then.

Lysis is a different sort of thing. Recovery in that way consists of a gradual improvement. The temperature drops slowly but encouragingly. The other symptoms likewise become gradually less and less severe. Instead of becoming virtually symptom free in a matter of just a few hours, as in a crisis, the dropping of symptoms usually requires three or four days. Fortunately, this type of recovery is as good as the other kind, in spite of being a great deal less dramatic. It is just as complete. There is just about the same chance of relapse. The danger of the after-effects is also just about the same.

Regardless of which type of recovery a particular case may assume, the patient and his family and friends should keep constantly in mind that he is not yet out of danger. For convalescence is long and slow. And the danger of a relapse is real. He needs to

spend several weeks in bed. If that is impracticable, he should at least give himself special care. He particularly should avoid heavy work. He should keep mental strain and long working hours to a minimum. He should pay particular attention to his diet, seeing that he eats plenty of good, nourishing food.

The marked progress made in recent years in the mastery of pneumonia which was mentioned earlier in this paper has come in several important stages. Some of them were widely different from the others. One of the most important early steps in that long march of recent years came with the typing of the pneumococci, or pneumonia germs. This typing consisted of ascertaining, by laboratory methods, which one of the numerous different types of pneumococci was responsible for a particular case of pneumonia. Then an effort was made to fight that particular type of germ with a specific serum.

Later on, a number of specific drugs were used with considerable success in the treatment of pneumonia. These included sulfa-pyridine, penicillin and streptomycin, each, in its own way, making it less likely that you and others will get pneumonia or die from it if you or they should get it. The latest drug to be added to the pneumonia armamentarium is terramycin. A group of physicians on the staffs of the Columbia University College of Physicians and Surgeons and Presbyterian Hospital reported a few weeks ago on its use with 25 patients. They called it "remarkably effective." However, it should be pointed out that nothing like a true estimate can be obtained regarding this new drug's value in pneumonia therapy until those who have been treated with it successfully number, not a quarter of a hundred but thousands of people.

So, let it be repeated and emphasized, the battle against pneumonia is still going on. It is far from being won. This disease still ranks high among the great killers. Optimism of a cautious kind is certainly justified. But reckless belief that this is no longer anything to be concerned about would be foolish in the extreme. Let us continue our fight as individuals. And let us give our support to the health agencies, official and unofficial, that are still carrying on the fight.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

October 1951

Examinations for diphtheria bacilli and Vincent's	662
Agglutination tests (typhoid, Brill's and undulant fever)	1,046
Typhoid cultures (blood, feces and urine)	803
Brucella cultures	26
Examinations for malaria	813
Examinations for intestinal parasites	3,794
Serologic tests for syphilis (blood and spinal fluid)	27,899
Darkfield examinations	5
Examinations for gonococci	1,988
Examinations for tubercle bacilli	3,239
Examinations for Negri bodies (microscopic)	82
Water examinations	1,634
Milk and dairy products examinations	4,498
Miscellaneous	1,597
Total	48,086

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1951

	Aug.	Sept.	E. E.* Sept.
Typhoid and paratyphoid	16	8	11
Undulant fever	2	7	0
Meningitis	7	7	6
Scarlet fever	17	29	39
Whooping cough	43	51	45
Diphtheria	12	32	48
Tetanus	6	3	6
Tuberculosis	199	218	232
Tularemia	0	0	0
Amebic dysentery	1	6	2
Malaria	23	9	202
Influenza	34	98	35
Smallpox	0	0	0
Measles	29	24	16
Polioomyelitis	218	157	17
Encephalitis	12	7	1
Chickenpox	8	8	4
Typhus	8	5	41
Mumps	45	44	26
Cancer	341	436	263
Pellagra	4	1	2
Pneumonia	71	61	105
Syphilis	183	278	1183
Chancroid	4	11	14
Gonorrhea	273	397	611
Rabies—Human cases	0	0	0
Positive animal heads	22	19	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director
RED WATER IN RURAL WATER SUPPLIES

Contributed by

J. L. Crockett, Jr., B. S., M. S.
Sr. San. and Pub. Health Eng.

The installation of a pump, pressure tank and piping system to provide water under pressure to the rural home has brought about an increase in the attention given to the chemical quality of water, particularly its iron content and corrosive properties. So long as water is drawn directly from wells or springs, neither corrosion nor iron presents a noticeable problem as the water does not pass through a piping system and, in most cases, is used shortly after withdrawal. Furthermore, piping of water to the house greatly increases its use, and the problems accompanying an iron water or one that is corrosive are more apparent.

The effect upon the use of water is the same whether the water be high in iron or is corrosive. In both cases water drawn from taps may contain iron in a dissolved or oxidized state. When water containing dissolved iron is exposed to air, the iron is oxidized and returns to an insoluble material which will impart a red or brown color to the water and may settle out as a fluffy brownish material. This color, as well as the sediment, is often mistaken for mud. It should be pointed out that water, freshly drawn from a spring or well, containing iron or having corrosive properties is usually as clear and sparkling as any other water.

Water containing iron in excessive amounts causes staining of plumbing fixtures and laundry, and affects the preparation of coffee, tea and some vegetables, in addition to having an unattractive color. If the iron content is high, the water may have an astringent or metallic taste.

Methods for the removal of iron and the control of corrosion have been developed and practiced for many years on public water supplies. Unfortunately these methods can rarely be applied to a private or rural supply due to their cost and, in most instances, the complexity of the treatment involved. It is the purpose of this paper, therefore, to discuss briefly ways and means by which the rural home owner may improve the chemical quality of an iron bearing or a corrosive water.

An iron bearing water contains iron as it is withdrawn from its source. Contact with air causes oxidation of iron, with the development of a red or brown color. The conventional method of iron removal as practiced by municipal or community supplies is to provide aeration of the water, followed by sedimentation and filtration through rapid sand or pressure filters. Chemicals, as lime or soda ash, are usually added to the water after aeration. While variations of this procedure are in use, it can be readily recognized that the cost, as well as control of the process, is more than the average rural home owner can afford. On the other hand, there are small filters equipped with zeolite or a similar material that are available for the removal of iron. These units operate under pressure and are usually installed between the pump and house piping. The zeolite, which is a filtering or contact material, becomes clogged with iron after a certain period of use, depending upon the iron content of the water. At this point the filter must be washed and the zeolite recharged according to the manufacturer's recommendations. Washing and recharging of the filter are very important to the operation of these units and must be given careful attention if satisfactory results are to be obtained. Iron removal filters designed for home use are manufactured by several concerns and can be obtained through most pump and water supply equipment dealers. In view of the cost of conventional methods of iron removal and degree of operation that must be given treatment plants of proven reliability, the small zeolite filter appears the only alternative for the owner of a private water supply having a high iron content.

A corrosive water is not as difficult to treat as one high in iron. It is also true that corrosive properties are frequently associated with iron. While proven methods used by municipal or community water supplies in controlling corrosion are not as costly in comparison to iron removal plants, they employ features unadaptable to the average home supply. The method more widely used by municipal supplies consists of aeration followed by the addition of soda ash or lime. This requires two pumps and a chemical feeder in addition to the aerator and pump sump. Reasonably accurate control

must be given to the feeding of the chemical. In recent years a sodium hexametaphosphate sold under the trade name of Calgon has been added to the pump discharge as a means of controlling corrosion. Except under conditions of very low alkalinity and pH, sodium hexametaphosphate has given satisfactory results and a small solution feeder is the only equipment required. In cases of low pH, soda ash or lime used in conjunction with Calgon has provided control of corrosion. Micromet, a chemical similar in many respects to Calgon but having the property of dissolving slowly, is now available for controlling corrosion in the home supply. A small, relatively inexpensive solution pot that can be installed on the pump discharge line between the pump and pressure tank is the only equipment needed for introducing Micromet. The solution pot holds sufficient chemical for two to four weeks, depending upon the quantity of water pumped. Refilling of the solution pot, a simple operation, is the only attention required by this method of controlling corrosion. On the basis of reported results, Micromet appears to be a promising solution to the owner of a private water supply confronted with the problem of corrosion.

It has been stated that the effects are identical whether a water is corrosive or contains iron at its source. It is apparent, therefore, that before a treatment method can be selected, the cause of red water, whether it is a corrosive or iron bearing water, must be determined. A chemical analysis is the only means by which this can be accurately accomplished. Chemical analysis can be obtained at a small cost by sending a sample of water to one of the professional laboratories engaged in the analysis of water. Some manufacturers of home water supply equipment perform these analyses free of charge. Samples of water should not be sent to the State Health Department as this department does not have the personnel to handle requests of this nature. There is a simple procedure by which it might be basically determined whether or not red or brown water is due to corrosion of the piping or to iron naturally present in the water. This procedure consists of collecting a quart of water directly from the well or spring, agitating the water thoroughly by stirring

or pouring it from one quart jar to another and allowing the water to stand for as much as twenty four hours. If the water remains clear it is an indication that corrosion is the cause of red water. Should a red or brown color develop it is due to iron naturally present in the water and which has been oxidized by aeration. This procedure will not apply to a water containing iron and also of a corrosive nature.

Rupture of the Lower Urinary Tract—The treatment of rupture of the lower urinary tract is dependent upon the location and the extent of the injury. It is desirable to know whether the rupture is intraperitoneal, extraperitoneal or urethral. Adequate treatment must also provide for the treatment of shock and associated injuries, urinary drainage, surgical drainage of the tissues into which fluid or urine has escaped, and, where possible, closure of the perforation or bringing into apposition the lacerated parts.

In intraperitoneal ruptures it is essential to know whether other abdominal viscera have been injured. The bladder and peritoneal cavity are opened, fluid aspirated from the abdominal cavity, and the abdomen examined to see if there are other abdominal injuries. The rupture in the bladder is closed on the peritoneal side with plain catgut. The bladder is then closed around a large catheter, employing the technic of Boyd. With the use of chemotherapy and antibiotics the peritoneal cavity is usually closed without drainage.

In intraperitoneal ruptures a suprapubic cystotomy may or may not be indicated, but the perivesical space is drained to the base of the bladder. If accessible, the laceration in the bladder should be closed, but this is not essential.

In lacerations of the posterior urethra where catheterization is impossible, the bladder is opened. Then working with a sound in the urethra and a second sound or finger in the bladder neck, the urethral sound is guided into the bladder. We have found the Thackston hemostatic bag to be ideal for drainage in these cases. The catheter end of the bag is threaded over the sound and pulled through the urethra by way of the suprapubic opening. This bag furnishes the suprapubic tube required for drainage, a bag to pull the prostate down and to approximate the torn ends of the urethra, as well as a catheter to splint the urethra to permit epithelization around it. The incision in the bladder is carefully closed around the suprapubic tube and the perivesical tissues are drained to the base of the bladder. The catheter end of the bag is strapped to the thigh to maintain light tension for 10 to 14 days. An indwelling urethral catheter is worn for 6 to 10 weeks to assure a urethra of normal caliber and to prevent the development of a traumatic stricture.—Robertson & Headstream, South. M. J., Oct. '51.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR JULY 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During July 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	7159	**	**	27.4	26.9	28.8
Total stillbirths	169	**	**	23.1	24.2	26.5
Deaths, stillbirths excluded	2245	1287	958	8.6	7.7	8.5
Infant deaths:						
under one year	259	139	120	36.2	30.6	36.6
under one month	177	104	73	24.7	22.4	25.4
Causes of Death						
Tuberculosis, 001-019	65	21	44	24.8	23.9	33.6
Syphilis, 020-029	13	3	10	5.0	4.6	7.0
Typhoid and paratyphoid, 040, 041					0.4	
Dysentery, 045-048	7	4	3	2.7	3.1	1.2
Diphtheria, 055					0.8	0.4
Whooping cough, 056	4		4	1.5	3.1	0.4
Meningococcal infections, 057	2	2		0.8	0.8	0.4
Poliomyelitis, 080, 081	9	8	1	3.4	1.9	1.2
Encephalitis, 082, 083	2	2		0.8	0.4	
Measles, 085	2		2	0.8		
Malaria, 110-117						0.4
Malignant neoplasms, 140-200, 202, 203†	260	170	90	99.3	83.7	89.2
Diabetes mellitus, 260	29	19	10	11.1	6.9	8.1
Pellagra, 281	1	1		0.4	0.4	1.2
Vascular lesions of central nervous system, 330-334	253	135	118	96.7	84.1	85.7
Other diseases of nervous system, 300-318, 340-398	36	17	19	13.8	10.4	15.8
Rheumatic fever, 400-402	3	3		1.1	2.3	1.2
Diseases of the heart, 410-443	640	408	232	244.5	233.8	245.2
Diseases of the arteries, 450-456	34	21	13	13.0	10.8	12.4
Other diseases of circulatory system, 444-447, 460-468	45	20	25	17.2	12.0	12.0
Influenza, 480-483	1	1		0.4	2.3	2.3
Pneumonia, 490-493	59	30	29	22.5	20.8	21.6
Bronchitis, 500-502	1		1	0.4	0.4	1.2
Appendicitis, 500-553	8	4	4	3.1	2.3	2.7
Intestinal obstruction and hernia, 560, 561, 570	16	11	5	6.1	7.7	7.7
Gastro-enteritis and colitis (under 2) 571.0, 764	20	7	13	7.6	5.0	15.8
Cirrhosis of liver, 581	14	9	5	5.3	3.5	4.2
Diseases of pregnancy and childbirth, 640-689	7	4	3	9.6	21.0	24.7
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	2	2		2.7	7.0	5.2
Congenital malformations, 750-759	26	21	5	3.6	3.3	3.7
Accidental deaths, total, 800-962	154	96	58	58.8	60.2	59.5
Motor vehicle accidents, 810-835, 960	68	49	19	26.0	29.7	22.8
All other defined causes	430	236	194	164.3	132.0	167.6
Ill-defined and unknown causes, 780, 793, 795	104	34	70	39.7	35.9	35.5

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the July report of the years specified.

**Not available or not comparable.

†Excluding Hodgkin's disease (201), leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

TELLS THREE-POINT PLAN FOR REHABILITATION OF DRUG ADDICTS

A three-point plan for long-term regional counseling and rehabilitation clinics for youthful narcotic addicts was given by Dr. Leonidas H. Berry, Chicago, in the November 17 Journal of the American Medical Association.

Not only will the clinics offer longer periods of medical supervision for effective rehabilitation of the addicts, but will also prevent many persons with the tendency to become addicts from doing so, Dr. Berry said.

Point one under the proposed plan is medical prevention. Youths who have not become too greatly addicted would be weeded-out and encouraged to come to a clinic to receive counseling against the tragedy of greater addiction. They would be given physical examinations, psychiatric screening or detailed psychiatric tests, vocational or occupational counseling and other types of treatment.

These youths would be referred for counseling by school principals and teachers, school psychiatrists, truant officers, welfare agencies, churches and courts of law.

"Many young drug addicts are free in the larger communities, groping for help outside the law," Dr. Berry stated. "Many parents of drug addicts are looking for help for their children and would gladly cooperate to get them into the hands of physicians before they get into the hands of the law. Victims helped by the clinic would undoubtedly send in their friends."

Those youngsters found to be too far advanced in the drug habit would be aided in finding adequate withdrawal treatment. Thus, the doctor said, sources of infection and reinfection for potential addicts and other susceptible persons would be identified and removed from the community.

"Far-reaching community contacts and the cooperation of a large number of civic institutions and organizations, public and private, would be necessary for successful operation of this plan," Dr. Berry stated.

"But, the threat of social disintegration of a large segment of the youthful citizens more than justifies the magnitude of the effort."

The second point of Dr. Berry's plan is the establishment of medical counseling clinics, which would be attached to existing out-patient departments of strategically located hospitals. Complete physical and psychiatric examinations would be given each addict visiting the clinics. Treatment as needed, vocational counseling, job placement and recreational programs would be included in the services of the clinics.

The clinic's personnel would include an internist, a psychiatrist, a clinical psychologist, a psychiatric social worker, two field social workers and a job placement or occupational counselor.

"Such a clinic, with adequate professional personnel, would combine sympathetic understanding with attempts to develop self-reliance and to discover potential talents for constructive contributions to society," Dr. Berry said.

The third point of the proposed plan is a medical follow-up program. This phase would enhance the effectiveness of hospital withdrawal care with long-term rehabilitation of drug addicts.

Upon discharge from hospitals or penal institutions, addicts would be persuaded to attend one of the counseling clinics. Here they would be given specific treatment toward breaking the drug habit completely. Today, four out of five addicts return to the use of drugs following such releases.

"Narcotic addicts discharged as cured from hospitals and penal institutions, unsupervised as they usually are, are a continuous source of contagion to other susceptible persons," according to the doctor.

The number of clinics, he said, would depend upon local needs. Funds for their operation might be provided by federal, state, county, municipal or private grants. The implementation and supervision of the regional group of narcotic clinics could be handled by a working subcommittee of

about 12 technical experts who would be representative of a much larger advisory board. This board should consist of representatives of welfare organizations; employment services; school boards; religious, business and industrial organizations; courts of law, and press relations.

Narcotic addiction among adolescents and young adults has reached epidemic proportions in some areas, Dr. Berry stated, adding:

"There is extensive evidence that the drugs are distributed by an organized underworld system reaching outside the continental United States, with its terminals located primarily in the poorest and most densely populated communities.

"The very nature of adolescence, with its instability of personality, under-developed poise and will power, and abundance of adventuresomeness, curiosity, and courage, offers a degree of susceptibility to drug addiction.

"Ultimate control of the drugs at the distribution level is seen as the final stroke which may destroy the epidemic nature of the problem."

SUGGEST MASS SCREENING TO DETECT EYE DISEASE

Mass screening of persons for early detection of glaucoma, a serious eye disease which may result in blindness, was suggested by Drs. Solomon S. Brav and Herbert P. Kirber, of Philadelphia.

The results of such a test on 10,000 persons have shown that the incidence of undiscovered glaucoma in the general population is approximately two per cent, the doctors reported in the *Journal of the American Medical Association* for November 17, 1951.

Their study, consisting of persons over 40 years of age, was made at large industrial plants. Of the 10,000 persons examined, 84 showed definite glaucoma, 69 early glaucoma, and 71 were borderline cases, a total of 224 or 2.24 per cent. An additional 100 persons were kept under further observation as possible candidates for the disease.

If caught in time and proper control methods instituted, glaucoma can be arrested. Unhampered progression leads to blindness.

The doctors pointed out that mass screening of the population has been applied for the early detection of diabetes, tuberculosis, cancer and other chronic diseases.

They suggested that the great majority of the population could be reached for such an eye examination if it were made part of routine physical examinations in industry, or by the creation of a specialized agency which would devise plans for such mass screening.

TELL HAZARD OF DIESEL LOCOMOTIVE RADIATOR FLUID

The increasing use of diesel locomotives has created a new industrial health hazard, according to Drs. John R. Winston and Edmund N. Walsh of Temple, Texas. The doctors are associated with the Scott and White Clinic and the Gulf, Colorado and Santa Fe Hospital.

To prevent serious, crippling skin inflammations caused by chromate salt compounds used in diesel locomotive radiator fluid, extreme precautions must be taken in the handling of it, the doctors stated in the November 17 *Journal of the American Medical Association*.

There is a high rate of sensitivity to such compounds, thereby creating a hazard of growing importance in the railroad industry, the doctors stated. Sensitivity develops after a comparatively long period of exposure, and, once developed, tends to increase rather than decrease in severity. Persons engaged in cleaning or repairing the locomotive motors or in the shop areas, as well as those handling the solution, are exposed to it.

The doctors suggested the following measures to aid in the reduction of the hazard of contact with the fluid:

1. Mechanical protective devices such as rubber gloves and boots, waterproof aprons and sleeves, and protective creams should be used by those handling the solution or the compound in the dry state.

2. Those found sensitive to chromate should be immediately transferred to other work so that contact with it is entirely eliminated.

3. Leaks in the radiator systems of the locomotives should be repaired immediately

by those properly protected and the contaminated area thoroughly washed.

4. Some substance without such sensitizing properties should be substituted. If this is not possible, the equipment should be redesigned to effect a minimal amount of spilling of the solution both in filling and draining the locomotive radiators.

COMPETITIVE ATHLETIC LEAGUES NOT DESIRABLE FOR CHILDREN

Highly organized competitive athletic leagues are undesirable for children and youth of elementary and junior high schools, according to Donald A. Dukelow, M. D., and Fred V. Hein, Ph. D., consultants to the American Medical Association Bureau of Health Education.

"The general public would do well to accept the professional advice of physicians and educators and allow these youngsters to grow up without the unnecessary emotional and physical strain of playing gladiator in the public arena," Drs. Dukelow and Hein wrote in the November Today's Health, published by the A. M. A.

Parents, they pointed out, want their children to have the best possible program of physical and health education, yet many reject the facts derived from exhaustive study of children in the first nine grades. The doctors said they wondered if this is because parents "prefer to bask in the reflected glory heaped upon immature children by an unthinking public which demands the last ounce of effort to win for good old X Junior High School."

According to the article, physical education in schools should stress a well-rounded program of instruction for all children, and, for as many as possible, an interesting, extensive program of intramural competition in team, dual and individual sports. This should be supplemented by sports days and play days.

The country's leading educational and medical groups, the doctors stated, have recommended that "interscholastic leagues should be confined to senior high schools. Interscholar activities for junior high school pupils should be limited to occasional meets or games. Junior high school boys should not compete in American football. An ex-

tensive program of intramural activities is strongly recommended for these students."

DRUG AIDS IN DISLODGING OBJECTS SWALLOWED OR INHALED BY CHILDREN

A new use for an old drug—aminophylline—to aid in dislodging foreign bodies swallowed or inhaled by children was reported in the November 24 Journal of the American Medical Association.

The drug, long prescribed to treat asthma, has been used successfully to relax the bronchial muscles and thus permit spontaneous remission of foreign objects inhaled or swallowed by youngsters, according to Dr. I. Newton Kugelmass, of New York.

Four such cases involving children were described by the doctor, who treated them by rectal retention of the drug. Prompt remission resulted.

"Children inspire or swallow foreign bodies because they explore things with their mouths," Dr. Kugelmass said. "Inspiration of such objects into the air passages is usually the result of a sudden gasp for breath after excitement, crying, or laughing, but swallowing may force an object over the laryngeal aperture."

OPERATION TO CORRECT HEART CONDITION PROVED SUCCESSFUL

Mitral stenosis, the narrowing of one of the valves of the left side of the heart, can now be considered curable as a result of a number of successful corrective operations, it was reported in the November 10 Journal of the American Medical Association.

Seventy-four per cent of the 214 persons suffering from the disease on whom they have operated have either improved or are now in excellent condition, Drs. Thomas J. E. O'Neill, Robert P. Glover and Charles P. Bailey, of Philadelphia, stated. The doctors performed the first such successful operation June 10, 1948.

The object of the operation is to cut and enlarge the valve in such a manner as to allow a greater flow of blood from the left auricle to the left ventricle and to reduce hypertension of the lung vessels.

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THE MANAGEMENT OF ACUTE OCULAR INJURIES

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A few years ago I think I might have hesitated before I selected ocular injuries as a subject for discussion before a state medical society. It is a regrettable commentary on the state of the world that today I not only choose the subject without hesitation but regard it as peculiarly appropriate. I need not apologize to you for its selection, nor explain to you why I have chosen it. You know, quite as well as I do, that if World War III should come, this country would in all probability be a theater of operations instead of a shielded Zone of Interior; and you know also, fully as well as I do, that we can expect heavy civilian casualty lists, and can expect in them a ratio of acute ocular injuries approximately the same as occur in military casualty lists.

I have necessarily been particularly interested in this subject recently because I have been studying it for the preparation of a chapter in a manual on the management of acute injuries of the civilian population authorized by the Regents of the American College of Surgeons at one of their 1950 meetings. It is appropriate that the Regents of the College should make this their concern, just as it is regrettable that the necessity should exist for them to do so.

The eye is so small a part, in area, of the human body that it is often not realized how frequently it is injured in wartime. Let me give you a few illustrations. At the 21st

General Hospital, for instance, ocular injuries accounted for 4.8 per cent of the total admissions, 6 per cent of the total battle casualties, and 13 per cent of the accidental injuries. At the 6th General Hospital they accounted for 3.4 per cent of all battle-incurred injuries and for 5.63 per cent of all accidental injuries—injuries that in many instances, as a caustic English ophthalmologist expressed it, were caused by “the stupidities of fools.” That these relatively small proportions were quite considerable numerically is evident in the fact that at the latter hospital 26,223 patients were cared for during its period of operation. Ocular injuries, moreover, are extremely serious. They are not lethal, unless they are associated with head injuries, as they frequently are, but they are responsible for a heavy loss of manpower. At the 21st General Hospital 40 per cent of the casualties with accidental injuries and 49 per cent of the casualties with battle injuries of the eye could not return to combat duty. If you will translate these figures into terms of civilian manpower, you will realize how important it is that not only the ophthalmologists of the United States, but every surgeon and every medical man also, shall familiarize themselves with the proper care of acute ocular injuries.

Injuries of the eyes may be roughly classified into:

1. Contusions of the eyes and adnexa, which may or may not be associated with fractures.

2. Lacerations of the eyes and adnexa, which may or may not be associated with fractures.

Read before the Association in annual session, Mobile, April 19, 1951.

From the Department of Ophthalmology, Tulane University School of Medicine.

3. Lacerations of the globe, which may or may not perforate the cornea, conjunctiva and sclera.

4. Severe intraocular hemorrhage without laceration.

5. Burns, including thermal burns, chemical burns, and radiation burns.

6. Foreign bodies, which may or may not be perforating.

Time does not permit an extended discussion of these various injuries, and I shall limit myself to a few subjects; in particular, the general principles of immediate management of acute ocular injuries, the management of one or two injuries of special frequency and importance, such as intraocular foreign bodies, and the description of a few techniques of management which I have found of special usefulness.

FIRST AID AND EMERGENCY MANAGEMENT

More than one ophthalmologist who saw military service has emphasized that a military practice which could be transferred to civilian surgery with a great deal of profit to both ophthalmologist and patient is the restriction of first aid to very simple measures. The best results were obtained in the Army when the medical corpsmen who administered first aid did almost nothing at all. These men were told that their task was to get the injured man to a medical officer as promptly as possible. In the meantime, all that they did was to remove superficial dirt and débris as gently as possible, cover the eye with sterile pads, instruct the patient to keep as quiet as possible and under no circumstances to touch the eye, and then to arrange for his evacuation, preferably recumbent, as promptly as possible.

It would be well if we could limit first aid in civilian surgery, even in peacetime, to these simple measures, with the addition, perhaps, of irrigations of boric acid, physiologic salt solution, or plain water if they happen to be available or if the injury is of chemical origin. It would be much better if persons not trained in ophthalmic work, or not medically trained at all, refrained entirely from any manipulative measures.

Transportation of the patient with an ocular injury in the dorsal recumbent position is highly desirable, though it is uncommon to find it done in civilian surgery. Sedation

may be used, if necessary, for the transfer but as a general rule it is not. The patient with an ocular injury often suffers surprisingly little. Many men with perforating wounds received on the battle field did not realize that they had sustained them.

The latter fact is the chief reason why a patient in whom circumstances suggest any possibility at all of ocular injury should be very carefully examined. This is particularly true if he is unconscious. A tiny shell fragment, with a wound of entry so small as to defy detection, may cause explosive destruction of tissue underneath the surface, just as elsewhere in the body. World War II saw a different kind of wound created by flying missiles of increased velocity, and if bombing raids should occur on American cities, that is the kind of injury we must look for.

To examine the eyes requires gentle separation of the lids, spasm being overcome by lid hooks if necessary. Pressure on the eyeballs is avoided. Loose foreign material, metallic bodies and dirt are removed if the material is superficial. Otherwise they are left undisturbed. There is no probing, and nothing is excised. All first aid workers should be warned of this; if they are not, it is quite possible to mistake prolapsed iris or dark bloody vitreous for a foreign body, with disastrous results.

If it is practical, it is best to bandage both eyes. But whether a monocular or binocular bandage is used, it is useless unless it is applied so firmly that it holds the upper lid in place and prevents winking. My own opinion is that a bandage which does not accomplish this purpose is worse than no bandage at all. It is actually harmful. A loose bandage which allows the patient to blink beneath it increases the irritation of the cornea because the lid is held more firmly than normal against it as blinking occurs.

A first aid measure, which can be used in an emergency by even an inexperienced physician, is the formation of conjunctival flaps, obtained by undermining the conjunctiva and formed by placing them over the damaged portion of the eye. Many eyes which might otherwise have been lost have been saved by this simple measure. There are records of wartime improvisations, when conjunctival flap-formation was im-

possible, by which strips of fascia lata were sutured across the injury, with salvage of the eye.

Sometimes the eyelids are so seriously damaged that the eyeball is left exposed. It must be protected at all costs. In some instances, remains of the eyelids can be sutured together, or conjunctival or skin flaps may be employed. If this also is impossible, there remains the desperate remedy of performing tenotomy on all the recti muscles so that the eyeball can be rotated underneath the conjunctiva as a means of temporary protection.

Enucleation of the injured eye should not be performed when the patient is first seen unless the tissues are so obviously disintegrated and destroyed that healing with any vision at all would be impossible. One reason why enucleation should be postponed is that on the first examination it is not possible to determine the true vision present. Often an eye which shows no vision immediately after injury later shows definite light perception or better. Wounds of the lens, while they do not justify immediate enucleation, strongly influence the decision for it if other injuries preclude the possibility of clear media to normal macula. Wounds of the ciliary body, which have long been recognized as the most dangerous of all injuries from the standpoint of the development of sympathetic ophthalmia, also weigh heavily in favor of enucleation.

The arguments formerly advanced in favor of prompt enucleation of the damaged eye no longer hold, for two reasons. The first is that infection is no longer a complication greatly to be feared. It can be prevented, or can be aborted when it becomes evident, by the liberal use of penicillin, the sulfonamides, or some other of the modern chemotherapeutic or antibiotic agents. Even panophthalmitis and endophthalmitis can be controlled by this means.

The second reason is that sympathetic ophthalmia, while it cannot be discounted, is now more clearly understood, and therefore is not as greatly feared as it once was. In minor or subclinical forms it is perhaps more frequent than we suspect it to be. In major forms it is not common. The exact incidence following perforating wounds is debatable. Duke-Elder set it at 2 per cent,

which is not borne out by the very limited number of cases observed among American troops. It is true that the statistics are qualified by the fact that the most dangerous eyes, in which sympathetic ophthalmia might be expected to occur, were usually removed before the period of danger began. This period does not ensue until 12 to 14 days after injury, and the patient should be given this time of grace in the hope that the eye, and with it some degree of vision, however slight, may be salvaged. On the other hand, with few exceptions, all injured eyes apparently destined for blindness should be removed before 21 days have elapsed after injury. The few exceptions are those eyes in which the chances of regaining some degree of useful vision outweigh the real danger of sympathetic disease. The routine use of the slit lamp and constant vigilance are, of course, necessary during this time. I would not have you think that I take the possible risk of sympathetic ophthalmia lightly. I do not. But what I am trying to say is that it is a deferred and calculated risk, not a risk to be averted by a prompt resort to enucleation, which is certainly the most final of all ocular operations.

If enucleation should prove necessary, either immediately after injury or later, it is most important that an implant be made at once in Tenon's capsule. If this is not done, a badly shrunken orbit will result, which cannot be overcome by secondary implantation. Secondary implantation is always difficult and is seldom successful.

One thing to be borne in mind in the emergency care of acute ocular injuries is that the primary operation is almost always the definitive operation. The surgeon seldom has a second chance. Corneal and scleral suturing, extraction of intraocular foreign bodies, and other surgery for trauma demand greater judgment and skill, and, ideally, better equipment, than almost any other ocular surgical procedures. Whenever it is possible, therefore, the physician who is not trained in ophthalmic surgery should limit himself to first aid measures, leaving the definitive operation to be done by an ophthalmic surgeon. This is practically always possible, as I shall point out shortly, when one is dealing with foreign bodies.

INJURIES OF THE EYELIDS

The repair of recent lacerations of the eyelids involves a good deal more than merely bringing together torn structures. If injuries which involve the margins of the lids are not accurately repaired, faulty healing follows, as the result of the change in the action of the strong band of orbicularis muscle fibers near the cilia, with the further result that there are cosmetic defects which are undesirable and functional disturbances which may be very serious. The three chief problems in the repair of lacerations of the eyelids are (1) accomplishment of perfect apposition of the margins of the lid, to prevent the formation of a notch, (2) increase of the raw area in the substance of the lid itself, to create a broader adhesion, and (3) the over-correction of an avulsion of the lid, to ensure its approximation and restore the level.

Such lacerations should be repaired promptly, because prompt repair avoids later deformities, but, whenever possible, the services of an ophthalmic surgeon should be secured, for this is specialized surgery. My own opinion, which is borne out by the good results achieved in many cases during the last war, is that the halving and other techniques devised by Wheeler are most admirably adapted for this sort of injury. If circumstances are such that the general surgeon must undertake the operation, he should remember that while the débridement of necrotic or devitalized tissue is an essential part of the operation, this is an area of the body in which there is little excess tissue, and no more than absolutely necessary should be excised.

CORNEAL ABRASIONS

Most corneal abrasions heal promptly because, while the corneal surface may lose most of its epithelium as the result of even a trivial injury, it may be entirely re-epithelized within 24 hours. On the other hand, in some persons the upper lids seem to be so constructed that in effect they create a suction between the globe and the lid, and the simplest abrasion may be a serious matter. The injured area seems unchanged for many days, the patient suffers severe pain, and secondary iritis is the rule. My own experience is that in this type of case, if the eye is studied with the corneal microscope, it will be seen that the epithelium surround-

ing the abrasion is loose and has the appearance of a ruptured blister or bulla, as in bullous keratitis. I have found it very useful, after thoroughly anesthetizing the eye, to hold the lids apart with a speculum and roll the loose corneal epithelium back from the abrasion with a tightly wound cotton applicator. It is often surprising to observe how much of the epithelium has been loosened by the suction of the lid. Sometimes only a small rim of normal tissue remains around the limbus. Débridement should not be discontinued until all loose epithelium has been removed. The edge of the epithelium left in situ is then cauterized with phenol or with a 50 per cent solution of trichloroacetic acid applied with a pointed applicator. If the original abraded area of cornea appears infiltrated or infected, it is similarly treated. After atropine ointment and sulfathiazole ointment are instilled into the eye, the upper lid is elevated by grasping the lashes between the forefinger and thumb and is brought down over the cornea. Both the eyes are bandaged before the patient is put to bed. Pain is controlled by the usual opiates and sedation is employed to secure sleep and rest.

CONCUSSION

The ocular results of concussion vary within a wide range, depending upon the degree of original trauma. Mild degrees result in intraocular hemorrhages, particularly in the anterior chamber. Ruptures of the iris and ciliary body are common. Rupture of the sclera may occur independently or in association with dislocation of the lens.

The severity of the initial picture is no indication of the final visual result. Detailed examination when the patient is first seen is often difficult, especially if there is an extensive rupture of the choroid, since the eye is usually so filled with blood that detailed inspection even of the anterior portion is not possible. If the lens capsule has ruptured, traumatic cataract is an outcome. Avulsion of the optic nerve may occur, not only when the missile has struck the eyeball but also as the result of blast.

The treatment of concussion is complete bed rest, with the eyes occluded for a week, and pinhole goggles worn thereafter. Daily field of vision studies should be carried out; they usually show great fluctuations in the

size and shape of the scotomas present before the final result is certain.

Absorption of blood from the vitreous is often very slow, and may be expedited by the use of dehydration, by means of the administration of 50 cc. of 50 per cent glucose by vein, followed by the administration every 3 hours during the day, and every 4 hours during the night, of 2 ounces of white Karo syrup in 3 ounces of fruit juice or of water. No other food or fluid is given while this treatment is employed, though pain is controlled and rest and sleep are obtained by the usual measures.

Recently Dr. Andrew C. Ivy, Professor of Physiology at the University of Illinois, and some of his associates have been running experiments on animals and they believe that high concentrations of glucose in the blood stimulate the pituitary gland to produce ACTH and this is probably the reason the dehydration routine is effective.

BURNS

We must be careful, in thinking of burned patients in a possible civilian emergency, not to become obsessed with the idea that we shall be dealing exclusively or chiefly with radiation burns. Those in positions of authority tell us that this is not true, that a person close enough to an atomic explosion to suffer from the effects of irradiation will most probably lose his life, or, if he survives, will develop an irradiation cataract, which must be managed by ordinary civilian methods, just as thermal and chemical burns should be managed.

Burns from flames or from flaming gasoline do not usually involve the eyeballs, but this should not be taken for granted. The eyes must be carefully examined and vision checked. In the absence of objective evidence, it is unlikely that any injury has been sustained. If there is visible evidence of injury, penicillin, aureomycin or sulfa ointments are used, or 1 per cent atropine ointment, and the eye is covered with a patch, care being taken to see that the lid is closed under it. If the patient is unconscious and the eye is open, it may be necessary to use sutures, to be certain that the eyeball is protected.

In any sort of chemical burn, the immediate and copious use of irrigations with plain water is the essence of first aid. If arsenical

gases are responsible for the injury, anti-septics and atropine should be used.

One simple and useful technique of management of burns is the employment of Mueller shields, made of acrylic, and available commercially. They come in various sizes and are so constructed that their radius of curvature is slightly less than that of the eyeball. As a result, when they are inserted in the eye they rest upon the bulbar conjunctiva of the upper and lower fornices and form a shallow protective cone over the cornea, which they do not touch. They are inserted exactly as an artificial eye would be placed in the socket, after the eyes are anesthetized with pontocaine and the conjunctival sac and cornea are thoroughly cleansed. Before they are applied the concave portion is filled with some ophthalmic ointment, which is selected according to the needs of the individual patient.

These shields have numerous advantages.

1. They separate the bulbar and palpebral conjunctivae and thus prevent the formation of adhesions or symblepharon. If the patient is seen late, and symblepharon may already be present, shields of progressively larger size are inserted at intervals of 2 to 3 days. This is a simple method of stretching bands of adhesions in the upper and lower fornices until the normal size of the structures is reestablished.

2. These shields prevent cicatricial ectropia following burns of the lids and my personal experience is that they correct these lesions when they have occurred.

3. They permit irrigation of the eye while they are in place. The chosen solution is applied through an opening in the shield, by means of a dropper, with gentle pressure, and mucus and debris are washed out with the irrigating fluid, which is expelled through the holes and around the edges of the shield.

The shield should be worn until healing of the cornea has occurred. It should be removed daily, cleansed, and then replaced. It greatly simplifies the treatment of burns, and it seems to me that it will be a useful technique if mass injuries of this kind must be treated, particularly by physicians who are not ophthalmologists.

INTRAOCULAR FOREIGN BODIES

Finally, let me say a few words about what are probably the commonest of intraocular injuries, foreign bodies. No new methods of management emerged from World War II, but in that conflict there was mass confirmation of the validity of practices in rather general use before the war. The current concept of management can be stated about as follows:

1. Primary enucleation of the damaged eye, as already pointed out, is never warranted unless the eye is hopelessly destroyed. Delay to determine the exact status of the eye is justified, partly to gain more exact information, partly because of the greatly reduced risk of infection achieved by modern methods, and partly because sympathetic ophthalmia is not an immediate hazard. In the interim, a careful examination of conditions can be made, and enucleation, if it proves necessary, can be resorted to in ample time to prevent complications.

2. The removal of an intraocular foreign body is never a true emergency. A foreign object eventually becomes embedded in the ocular tissues, it is true, but the process does not occur immediately, and there is ample time for all necessary diagnostic measures and for bringing the patient to a properly equipped hospital and a properly qualified eye surgeon.

3. Patients with intraocular foreign bodies are preferably transported recumbent, and always with both eyes covered. First aid measures, as already noted, should be limited to simple cleansing of the external eye and the application of sterile bandages.

4. The most important diagnostic consideration in intraocular foreign bodies is exact x-ray localization. The Sweet method, while it is more time consuming than other methods, and requires greater skill and experience on the part of the radiologist, is unsurpassed from the standpoint of accuracy.

5. Operation is best performed under good anesthesia, such as we use for cataract extraction, or sodium pentothal can be used.

6. Generally speaking, an attempt should be made to remove all intraocular foreign bodies, though whether this policy should be followed in special cases depends upon the

constitution of the object, whether or not it is likely to give rise to inflammation presently or in the future, and whether, if it is unlikely to cause an inflammatory reaction, more harm will be done by the attempted removal than by the continued presence of the object.

7. The route of approach depends upon the location of the object. Each case should be studied on its merits and the anterior or posterior approach should be used depending upon which will permit the simplest and least traumatic removal of the foreign body.

8. Magnetic objects are removed with the small magnet or, if that measure fails, with the large magnet, through an appropriate incision, which, incidentally, is seldom the wound of entrance.

9. Nonmagnetic objects lying in the anterior chamber can be removed through a keratome incision with a fine splinter forceps or a blunt Arruga forceps, without great difficulty. Other special techniques permit the use of forceps to remove nonmagnetic foreign bodies lying in the lens and in the vitreous.

10. The administration of penicillin and streptomycin or a sulfonamide should be standard practice as soon as the patient is seen. Treatment should be continued for several days after operation.

11. Foreign protein therapy should be begun promptly, preferably in the form of typhoid H antigen intravenously or injections of milk intramuscularly.

Esophageal Lesions—Although the indications for surgical treatment of benign tumors are not as urgent as for malignant lesions of the esophagus, surgical removal is indicated. These tumors are usually large when first seen, and therefore act as a mediastinal tumor by compressing the esophagus and the adjacent mediastinal organs. It is considered possible that these tumors may undergo malignant change. The pedunculated tumors may be readily removed through a cervical or transthoracic esophagotomy. The intramural tumors may be shelled out from the wall of the esophagus preserving the intact mucosa, the wall being reconstructed after removal of the tumor. In a few instances the mucosa will be damaged in the removal of the leiomyoma which may necessitate a resection and an anastomosis.

Small pedunculated tumors may be removed through the esophagoscope by means of a snare and cautery.—*Paulson, Arizona Med., Nov. '51.*

SURGERY IN THE TREATMENT OF HYPERTENSION

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It is not within the scope of this paper to give full discussion to the many factors which contribute to the clinical picture of hypertension and its complications. The surgical attack on this disease which will be discussed should in no sense be considered a cure for hypertension but must be viewed as a powerful physiologic adjunct to medical therapy. It is not applicable to every patient with hypertension and in many instances does not permanently cure those patients on whom it is used. In spite of these limitations, adequately extensive thoracolumbar sympathetic and splanchnic nerve resection is at this time one of the most powerful weapons against the ravages of hypertension.

PHYSIOLOGIC RATIONALE FOR THORACOLUMBAR SYMPATHECTOMY

Specific types of hypertension such as that due to pheochromocytoma, mechanical factors such as congenital coarctation of the aorta, or specific unilateral renal ischemia of the Goldblatt type are extremely rare and each has its specific surgical indication. Since excision of a pheochromocytoma, resection of an area of coarctation of the aorta, or removal of a chronically ischemic kidney will dramatically cure these rare specific types of hypertension, every effort must be made to discover them if they exist. However, the great bulk of hypertensive patients have what is loosely called essential hypertension, and it is with this group that we are primarily concerned. Physiologic studies¹ concerning essential and malignant hypertension through the years have implicated the following as possible etiologic factors:

(1) hyperactive smooth muscle of blood vessel walls due to excessive stimulation through the sympathetic nervous system, (2) humoral mechanisms from the adrenal glands, or ischemic kidneys, and (3) path-

ologic arteriolar sclerosis in the kidney and periphery. It is likely that all these factors are involved. However, from the clinical viewpoint, and experimental support for this hypothesis also exists, it would seem that hyperactive smooth muscle of blood vessel walls is the primary physiologic disturbance in most instances. Humoral mechanisms may well play a part in this hyperactivity but, in any event, the vasospasm is largely mediated through the sympathetic nervous system. Pathologic arteriolar sclerosis is generally a later development as a consequence of persistent vasospasm, and this pathologic change conforms to the development of irreversibility of the hypertension and to the serious cerebral, cardiac, and renal consequences of the disease. Obviously many factors, such as heredity, environmental circumstances, dietary habits, and individual psychologic characteristics, are of primary importance in initiating the hypertensive chain reaction. Control of these factors by intensive medical therapy is clearly the most important aspect of treatment of these patients. Some patients cannot or will not be controlled by medical measures, however, and in them a surgical attack on the basic physiologic disturbance has been found to influence favorably the natural progression of the disease in a significant manner.^{1, 2, 3, 4, 5}

The first effort to modify the course of hypertensive disease by interruption of sympathetic impulses was made in 1924 by Adson, who performed a bilateral lumbar sym-

2. Poppen, James L.: Extensive Combined Thoracolumbar Sympathectomy in Hypertension, *Surg., Gynec. & Obst.*, June 1947, pp. 1117-1123.

3. White, J. C.: Progress in Surgery of the Autonomic Nervous System, 1940-1942, *Surgery* 15: 491-517, March 1944.

4. Craig, W. M., and Abbott, K. H.: Surgical Considerations in the Treatment of Hypertension, *Ann. Surg.* 125: 608-616, May 1947.

5. Smithwick, R. H.: The Surgical Treatment of Hypertension, Editorial, *Surg., Gynec. & Obst.*, April 1950.

Read before the Association in annual session, Mobile, April 20, 1951.

1. Smithwick, R. H.: Surgical Physiology of Hypertension, *S. Clin. North America*, December 1949, pp. 1699-1729.

pathetic neurectomy.⁶ During the twenty-seven years since this first effort was made, considerable interest in this method of therapy has been shown by many surgeons and their medical colleagues, notably Adson, Craig, Peet, Smithwick, Crile, Grimson, Poppen, Hinton, Ray and DeTakats. Various surgical techniques have been developed to increase the area of denervated vascular bed and thereby attempt to improve the results of such treatment. (See Fig. I.)⁷

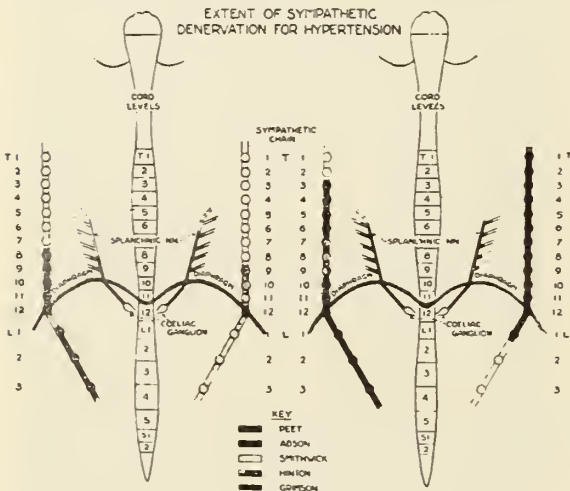


Fig. I

This diagram from a recent article by DeTakats et al.⁷ illustrates the various extents of sympathetic and splanchnic denervation which have been employed.

Because of the unpredictable nature of hypertensive disease in any given case and the long period of time necessary to evaluate any form of therapy, it has required a full quarter century of careful study of final outcome to assess the value of sympathetic nerve resection in the treatment of this disease. Even now some of the more recently introduced total and near total thoracic and lumbar sympathectomies are not thoroughly evaluated.^{1, 8} The same may be said of some of the more recent forms of medical thera-

py. The most careful efforts to answer this difficult question have been made by Dr. Reginald Smithwick¹ in attempts to evaluate the long term results of treatment by his operation of thoracolumbar sympathectomy from T8 through L2 and total splanchnicectomy. This operation has now been performed in a uniform manner upon carefully studied and classified groups of patients for a sufficiently long period of time to permit valid long term comparisons with similar groups of patients treated medically only. The most valuable long term survival study of carefully classified groups of hypertensive patients treated by medical measures is that of Keith, Wagener, and Barker reported in 1939.⁹

In Fig. II and Fig. III you will see the long term survival rates of Smithwick's first 326 consecutive unselected patients treated surgically, compared with Keith, Wagener and Barker's 219 non-surgically treated patients.¹

MORTALITY AMONG HYPERTENSIVE PATIENTS 5-9 YEARS AFTER FIRST EXAMINATION OR 5-10 YEARS AFTER OPERATION

Hypertension Group or Grade Eyegrounds	Keith, Wagener, Barker			Smithwick		
	No. of Cases	Deaths	Mortality	No. of Cases	Deaths	Mortality
N	—	—	—	21	1	5%
1	10	4	40%	88	10	11%
2	26	17	65%	90	21	23%
3	37	34	92%	84	40	48%
4	146	145	99%	43	22	51%
Total	219	200	91%	326	94	29%

Fig. II

This chart is taken from Smithwick's study.¹

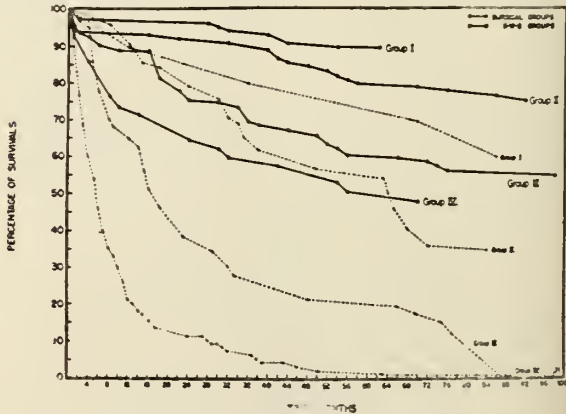


Fig. III

This graph is reproduced from Smithwick's comparative study.¹

6. Rowntree, L. C., and Adson, A. W.: Bilateral Lumbar Sympathetic Neurectomy in Treatment of Malignant Hypertension: Report of Case, J. A. M. A. 85: 959-961, 1925.

7. DeTakats, Geza; Julian, O. C., and Fowler, E. F.: The Surgical Treatment of Essential Hypertension, Surgery 24: 469-479, September 1948.

8. Ray, Bronson S., and Console, A. Dale: Evaluation of Total Sympathectomy, Ann. Surg. 130: 652-673, October 1949.

9. Keith, N. M.; Wagener, H. P., and Barker, N. W.: Some Different Types of Essential Hypertension: Their Cause and Prognosis, Am. J. M. Sc. 197: 332-343, 1939.

Report of a most carefully controlled study has recently been made in the Journal of the American Medical Association by Dr. Paul White.¹⁰ In this report Dr. White compares long term survival rates in 50 private patients with advanced hypertensive disease who were operated upon by Dr. Smithwick with 50 similarly advanced hypertensive patients treated by non-surgical measures by himself.

THREE YEAR FOLLOW-UP OF DR. PAUL WHITE'S PATIENTS ¹⁰			
50 Patients Treated By Sympathectomy		50 Patients Treated Medically Only	
Better	44%	Better	10%
Same	10%	Same	6%
Worse	22%	Worse	2%
Dead	24%	Dead	82%

Table 1

Many other favorable reports have appeared but these two careful studies—one from a pioneer in evolving an effective surgical attack on hypertension, and the other from one of our most respected and experienced cardiologists—seem convincing proof that this physiologic surgical attack on the hypertensive state has significantly altered the course of the disease in many cases. The selection of cases for sympathectomy is the most difficult phase of this problem. When is a hypertensive state severe enough to justify surgical attack and when is it too far advanced to make the effort worth while? The answer to this question requires carefully balanced judgment of internist and surgeon. Smithwick's recently published method¹ of grading patients preoperatively on the basis of a variety of clinical studies seems to offer the greatest promise of a precise yardstick to determine which patients should be accepted for surgery and which should not.

The surgical treatment of hypertension has for several years been of interest to us and we have had some experience with the Smithwick type of extrapleural transdiaphragmatic thoracolumbar sympathectomy. Within the past year, however, it has been our feeling that certain advantages could be

obtained by employment of a transthoracic transdiaphragmatic approach to the thoracolumbar sympathetic chain and splanchnic nerves. Variations of the transthoracic approach have been utilized by Linton, Grimson, Wilson, Shumacker, Massell¹¹ and others. The advantages^{11, 12} of this approach are:

- (1) Adequacy with which the nerves, with their variations in distribution, may be exposed.
- (2) Direct ease with which troublesome intercostal vessels may be dealt and damage to important structures such as the thoracic duct avoided.
- (3) Exactness of carrying the dissection to the desired extent.
- (4) In our hands a lower incidence of pleural or extrapleural effusions or hematomas—due to the fact that less raw surface is created and to the ease of hemostasis secured by excellent exposure.
- (5) Less severe intercostal neuralgia utilizing the thoractomy incision than after the extrapleural dissection.

For illustrative purposes, a group of drawings from an article by Massell, Ettinger, and Vos Kamp¹¹ will give some idea of the technique which we have employed.



Fig. IV

10. White, Paul D.; Dismond, E. Grey, and Williams, Armistead: Follow-Up Study of One Hundred Private Hypertensive Patients with Cardiovascular Complications, J. A. M. A. 143: 1311-1317, Aug. 12, 1950.

11. Massell, T. B.; Ettinger, Jerome, and Vos Kamp, J. R.: A Technique for Extensive Thoracolumbar Sympathectomy Without Rib Resection, Surgery 27: 82-92, January 1950.
12. Shumacker, Harris B., Jr.: Transpleural and Extraperitoneal Approach for Extensive Sympathectomy and Splanchnicectomy, Surg., Gynec. & Obst. 91: 711-716, December 1950.

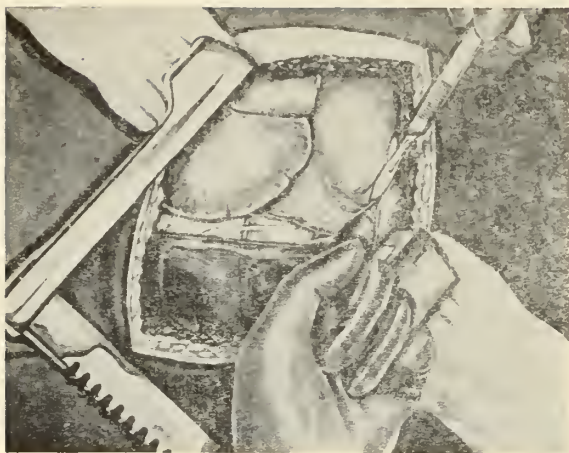


Fig. V



Fig. VI

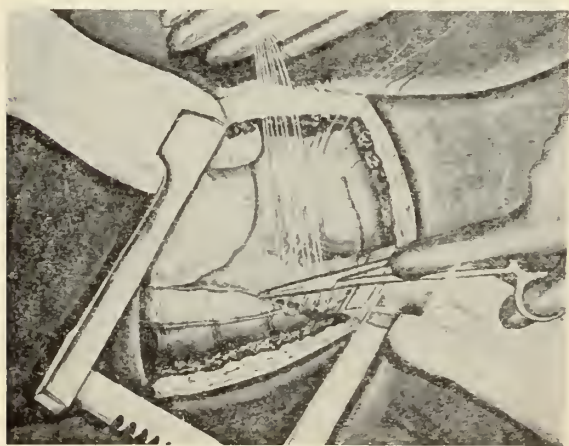


Fig. VII

This approach for resection of the thoracolumbar sympathetic chain and splanchnic nerves has been used on three hypertensive patients within the past year.

Figure VIII is a photograph of the left sympathetic chain and splanchnic outflow from one of our patients (M. B. S.). It shows ganglia from T-6 through L-2 with the entire splanchnic system.



Fig. VIII

The next three illustrations will show the blood pressure responses obtained in this small group. Each of these patients received marked symptomatic relief from seriously incapacitating symptoms which had failed to respond to all medical measures.

The blood pressure readings appearing in the illustrations are recorded in a reclining position. These are therefore the highest

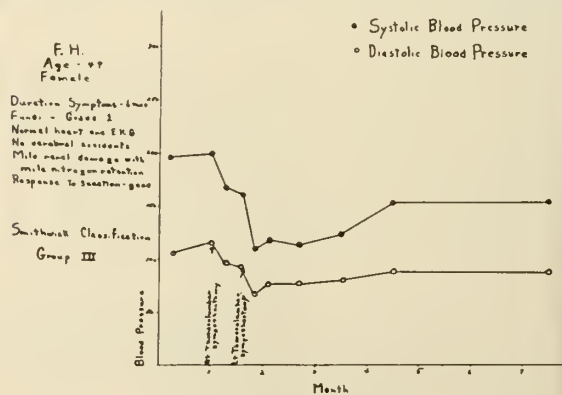


Fig. IX

readings obtained since the sitting and standing posture always yields lower readings after this type of sympathectomy.

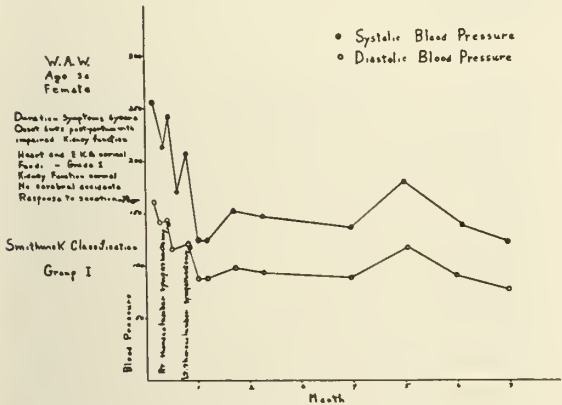


Fig. X

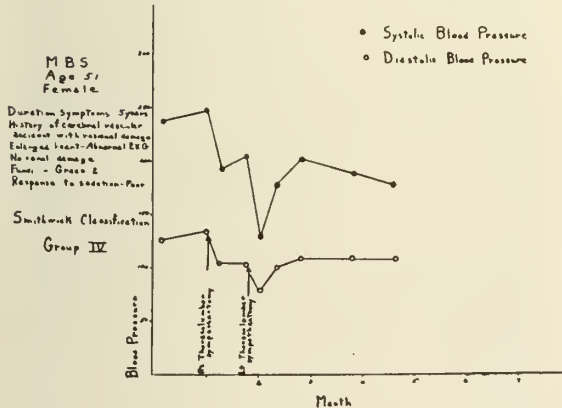


Fig. XI

SUMMARY

Adequate thoracolumbar sympathectomy and splanchnicectomy have been definitely proved to alter favorably the course of hypertensive disease in certain patients. No patient should be accepted for such surgical treatment until he has been carefully evaluated by a well qualified internist who will have made every effort to control the hypertensive disease by all modern medical measures. The early hypertensive states can usually be controlled by skilful medical management so that surgical treatment will not be required. In general, the patients with marked arteriolar sclerosis, badly impaired kidney function, or high fixed diastolic pressures above 140 mm. of mercury are not suitable candidates for this operation because little if any benefit will be obtained. Between these two extremes certain patients may possibly benefit from

thoracolumbar sympathectomy and their proper selection is of extreme importance—requiring careful combined judgment of internist and surgeon.

The operation may be performed by a variety of techniques but it is our own feeling that the transthoracic transdiaphragmatic approach used in the three cases presented has certain definite advantages which have been discussed.

Intraocular Foreign Bodies—Once the probability of an intraocular foreign body has been established, the x-ray localization should be done. The exact localization is most important since the treatment or surgical intervention is dependent upon this location. This requires close correlation between the clinical and x-ray findings. There are many techniques used to locate an intraocular foreign body. The popularity of the different methods will vary depending upon each section of the country. During the year 1950 we had twelve cases and the Sweet method of localization was used exclusively. It is satisfying to know that your selected technique of localization has been proven dependable. Many eyes have been lost because of improper localization resulting in unnecessary manipulation and operative procedures. Other eyes are lost as a result of improper localization leaving the foreign body inside the eye when it could have been removed.

The method used to localize a foreign body, to be accurate, must meet certain requirements. First, it goes without saying, that it must be fully understood and the technique mastered by the person making the examination. Second, it must localize the body in three dimensions in relation to a fixed point on the eye globe, the center of the cornea. To accomplish this, the principle of the stereoscope must be employed, making two exposures, and tube shift, while the globe remains stationary. The Sweet method meets these requirements and is the method most widely used in this country.

Both eyes should be bandaged until the patient is taken to the operating room. This prevents motion and possible complications from intraocular hemorrhage. When there has been an intraocular hemorrhage or enough time has elapsed since the accident for infection, there is severe pain and large doses of narcotics may be required.

Antibiotics may be given systemically. The combination of penicillin and streptomycin may be used. Sulfonamide preparations are probably absorbed more readily by the ocular tissues.

Tetanus antitoxin should be given unless a sensitivity reaction is present.

Thyroid H antigen is the most effective foreign protein agent in our hands and we give at least two intravenous injections of twenty-five or fifty million units.—*Landers & Burton, J. Arkansas M. Soc., Nov. '51.*

PROFESSIONAL RESPONSIBILITY IN CATASTROPHE MANAGEMENT

CHAMP LYONS, M. D.
Birmingham, Alabama

The Council on National Emergency Medical Service of the American Medical Association has advocated that each state medical society establish emergency medical service committees. It has also been urged that representatives of state medical societies should serve on the civil defense advisory committee appointed by the governor of the state. It seems pertinent, therefore, to foster a discussion of our responsibilities as doctors in the planning for catastrophe management.

In the event a catastrophe occurs in your community you may be assured that all the casualties, living and dead, will be rushed immediately to your hospital for further management. A great many doctors, perhaps unaware of disaster possibilities, may think that the American Red Cross or some other organized unit of civilian defense will come forward to meet the tremendous problem. It is the view of the American Medical Association, however, in working out programs with these various organizations, that local physicians in a disaster region are primarily responsible for the care of the sick and wounded. It is the duty of the Red Cross and organized units of civilian defense to cooperate in supplying food, shelter, and medical supplies, and to recruit additional personnel where necessary. Ultimate responsibility for the immediate and subsequent disposition and care of the injured, therefore, falls squarely upon the shoulders of local physicians. If hospitals and doctors are to meet their community obligations in this time of crisis, it is essential that there be prior planning. It has been necessary for me to participate in two great civilian disasters: the Cocoanut Grove fire in Boston, and the Texas City disaster near Galveston. In addition, it was my privilege to serve as a consultant in the Mediterranean Theatre of Operations during World War II. Many

lessons have been learned from these experiences. In the first place, it is impossible to prepare adequately for all the possible contingencies in an unpredictable catastrophe. As doctors, I believe we should have a plan at hand to guide us in the professional management of an overwhelming number of civilian casualties. The exact plan and organization will differ from community to community. Further, the responsibilities of communities will be variable. In the event of a major catastrophe in a large urban area, smaller communities will undoubtedly be called upon to attend evacuees and the walking wounded. It has also been learned that expeditious care of the wounded demands that professional personnel be familiar with local hospital facilities. This is especially true in times of chaotic disruption of normal hospital service. It follows, therefore, that the affiliated personnel of a hospital unit should accept all the responsibility for local service. Doctors in outlying centers are well advised to ready their own units to receive casualties rather than trying to render volunteer service in unfamiliar areas. Another facet of this problem arose in Galveston during the Texas City catastrophe. Volunteer workers of dubious professional competency undertook the suturing of wounds without authorization. The unfortunate victims of this well-intentioned but misguided zeal paid the price of anaerobic wound infection in many instances. This was the source of the concern about gas gangrene at that time. It follows that only accredited staff members should be authorized to accept professional responsibility for the care of victims admitted to individual hospitals.

Every major catastrophe has a characteristic and predominant pattern of injury. It is important that this pattern be identified as soon as possible. Knowledge concerning the extent of the blast effect, exposure to chemical compounds, and inhalation of noxious fumes may contribute greatly to successful casualty treatment. If this information is to be made available as promptly as possible, it is well to have a pre-arranged

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Professor of Surgery and Chairman of the Department of Surgery, Medical College of Alabama.

liaison with civilian authorities assigned to police the scene of the disaster. All pertinent information from this source should be relayed at once to medical centers for distribution to physicians responsible for patient care.

In order that the physiologic pattern of response to the injury may be recognized early, it is generally recommended that the doctor most experienced in the management of traumatic injury be freed of direct responsibility to any given patient. He should be assigned a supervisory role with responsibility of planning policy in treatment on the basis of factual observation of a large number of casualties. In this way such complications as pulmonary edema may be recognized early and lives may be saved by anticipatory treatment.

It is also wise that the local pathologist be authorized beforehand, in the event of a catastrophe, to perform autopsies on selected victims. Postmortem findings frequently clarify the predominant pattern of injury and draw attention to lesions which might otherwise remain obscure.

One of the most difficult professional responsibilities during a catastrophe is triage, or diagnosis of the extent of injury. It is necessary to divide admission into three general categories of: (1) lightly wounded, (2) seriously wounded, and (3) dead on arrival. Special problems relate to the handling of each of these categories.

If the number of casualties is large, the lightly wounded should be given first aid and evacuated for treatment to community hospitals outside the disaster area. Only in this way can adequate professional care, feeding, and housing be provided for this group.

The seriously wounded should be routed to resuscitation units or shock wards for final appraisal and specific treatment.

The "dead on arrival" diagnosis is the most difficult diagnosis of all to establish with certainty. Inevitably, in the rush of work at the initial triage, apparently lifeless but still living patients will be erroneously classified as dead. As a matter of experience, it can be stated that no patient should be consigned to the morgue unless three independent examiners have agreed that the body is lifeless. Even then, it is

wise to have patients segregated and under observation within a morgue area for a period of three hours. A large room or corridor should be designated for the morgue and a physician should be in charge in order that any signs of life may be detected.

Another responsibility of the morgue officials is identification of victims. Females offer the greatest problem because they so rarely carry identification with them. It is wise to plan to photograph all morgue patients remaining unidentified for more than 12 hours. Personal effects should be retained with the body until identification is complete.

Also, there should be an established public relations office within the hospital area. The function of this group should include:

- (1) Information service for families and relatives of victims,
- (2) Liaison with the Red Cross,
- (3) Liaison with accredited members of the press,
- (4) Liaison with morgue officials,
- (5) Liaison with volunteer workers.

Most of these responsibilities are assumed with grace and tact by the Woman's Auxiliary group.

If, as we hope and pray not, a major catastrophe involves one of our large urban centers, there may be the necessity of providing ancillary professional help in the management of casualties. This is best done by dispatching complete teams of specialty workers; e. g., neurosurgeons, orthopedists or thoracic surgeons. Perhaps it would be well for the state medical association to establish a central registry of available specialist talent within the state. Requests for such teams could then be handled through a recognized channel.

The actual management of the casualties usually demands the establishment of shock wards, surgical teams, recovery wards, and routine wards. If the casualties have suffered traumatic wounds, it is wiser to assign the surgeons to the operating rooms and other doctors to the shock and recovery wards. Activity in the performance of surgical operations should be limited to a tour of duty of 8 to 10 hours, with an appropriate rest period in between assignments. It was learned overseas that longer duty tours of active surgical operating resulted in diminished efficiency. Off-duty surgeons may

well spend another 4 hours as consultants in shock or recovery wards, but should then have a rest period of 6 to 8 hours. Similar arrangements should be made for all personnel, for the professional load continues heavy for an average period of 5 days after a major catastrophe. At this time, many seriously wounded may be evacuated, without risk, to centers prepared to undertake their subsequent management.

These, then, represent organizational plans for urgent consideration. Group discussions will undoubtedly elaborate many details and suggest major alterations. Perhaps it would be well to have an established emergency medical service committee operating under the state medical society as recommended by the Council on National Emergency Medical Service of the American Medical Association.

ACUTE ABDOMINAL CONDITIONS AS SEEN IN GENERAL PRACTICE

E. L. STRANDELL, M. D.
Brewton, Alabama

In this paper I wish to give a resumé of acute abdominal conditions seen by my colleagues and me at the Escambia County Hospital, Brewton, Alabama, covering 325 cases over a period of approximately three years. No attempt will be made to discuss all causes of acute conditions within the abdomen. The cases covered consisted of the following:

1. Acute appendicitis,
2. Perforated peptic ulcer,
3. Intestinal obstruction,
4. Strangulated hernia,
5. Ectopic pregnancy,
6. Acute cholecystitis,
7. Acute abdominal conditions peculiar to women, excluding pregnancy,
 - a. Acute salpingitis,
 - b. Pyosalpinx,
8. Traumatic abdominal injuries, and
9. A miscellaneous group of diseases which may simulate acute conditions within the abdomen, such as pneumonia, diabetes, tabes, food poisoning and cardiac diseases.

When we think of a condition as being acute or of an emergency nature we indicate that the condition has progressed to a stage in development where immediate measures are indicated for its control.

Because of the skin-and-its-contents type of medical practice that the majority of us do in small communities, and especially in

rural areas, we find that acute abdominal conditions consume only about 1/6th to 1 8th of our time. Thus, if we exclude all types of elective surgery and take into consideration only the acute conditions which demand immediate attention, the average general practitioner will not see more than 5 to 10 patients a month who fall in this category. This, seemingly, is a very small number but to me, and most of you, it is sometimes probably more than enough, especially when problems arise as to diagnosis, treatment, and question of surgical intervention.

Before considering the several acute conditions within the abdomen that may claim the attention of those in general practice, it would be well to stop and consider some of the fundamental principles which form the basis of a successful diagnosis.

Dr. Zachary Cope, in his monograph on "The Early Diagnosis of the Acute Abdomen," stresses six fundamental principles which, I think if followed, will lead to a higher percentage of correct diagnoses; consequently will lead to earlier treatment and surgery in these cases, thus gradually lowering the mortality rate.

I. The necessity of making a serious and thorough attempt at diagnosis by using the facilities we have at hand, thus avoiding the tendency, we have at times, of making a snap-diagnosis, which, when correct, is very impressive but usually unreliable.

II. Diagnose early. Try and come to a decision when the patient is seen for the first time. The tendency of waiting for

clearer indications and of generally tempo-
rizing only leads to disaster. The recovery
rate from acute abdominal diseases increases
in proportion to the earliness of diagnosis
and treatment.

III. A thorough routine examination. This
can not be stressed too loudly nor too often,
for many is the patient whose abdominal
complaint is caused by some condition far
removed from any curative effect of sur-
gical intervention.

IV. The application of one's knowledge
of anatomy. We all use this principle in our
every-day practice of medicine. However,
by increasing your knowledge of the struc-
tural relationships, one will be able to rule
out certain conditions more effectively.

V. The application of your knowledge of
physiology. This is intimately connected
with the principle of anatomy, for the two
combine to give the chain of signs and symp-
toms in disease.

VI. The necessity to exclude medical dis-
eases before concluding that the condition
is one needing surgical intervention. This
is a most important principle. We have all
seen and heard of cases which, when oper-
ated upon, turned out to be pneumonia, in-
testinal parasites or some cardiac disease.

ACUTE APPENDICITIS

This group consisted of 260 cases. Of this
number, 8 per cent had perforated, with
various stages of peritonitis. Two per cent
had formed appendiceal abscesses. The
mortality rate in the group was zero.

All cases of appendicitis	260
Mild or simple acute appendicitis	208
Acute appendicitis with localized peritonitis	26
Acute appendicitis with extending peritonitis	21
Acute appendicitis with appendiceal abscess	5

The mortality rate of acute appendicitis
for the state of Alabama for the year 1949
was 93 cases or three per cent. The over-all
average in Alabama from 1944-1948 was 132
cases or 4.4 per cent. The provisional rate
in Alabama for 1950 shows a marked de-
crease to approximately 52 cases which com-
pares very favorably with the national aver-
age. What has brought about this reduc-
tion? The credit is due you people here

through a process of education of the people
in your communities. This means that a
majority of people now seek medical aid for
abdominal pains early instead of staying at
home and using various remedies like Ep-
som salt, castor oil, or other purgative. Con-
sequently, we see them in the early stages
of the disease, and rapid recovery is the
rule.

All of us are familiar with the classical
and typical pattern of acute appendicitis;
and 90 per cent of our cases fall into the
group where there is no difficulty in arriv-
ing at a diagnosis. The deviation from this
classical picture, however, are those cases
where the appendix is pelvic in location,
causing crampy pain in the lower abdomen
and having little or no localization. Those
lying deep in the lateral gutter, with pain
extending into the right flank, give the im-
pression that the right kidney is the cause
of the trouble. It was this type that gave
us our five cases of appendiceal abscess. We
have seen no cases with incomplete or mal-
rotation of the cecum, in which instance the
diagnosis is usually erroneous.

It has been our policy in these cases to
operate as soon as possible, using the tie and
purse-string method, postoperatively using
antibiotics where indicated. In appendiceal
abscess we drain the abscess and advise in-
terval appendectomy at three months. In
one case of appendiceal abscess we attempt-
ed to remove the appendix and on the fourth
postoperative day the patient developed a
fecal fistula. This closed spontaneously in
six months. The patient, now well, taught
us to follow established surgical principles.

PERFORATED PEPTIC ULCER

This series contains ten cases with no mor-
tality.

All cases of perforated peptic ulcer	10
Operative closure	8
Conservative treatment	2

One patient refused operation although
the diagnosis was confirmed by x-ray. It
is interesting to note that this group con-
sisted of nine males and one female and that
the ages ranged from twenty-five to forty-
eight years. The length of time from onset
of symptoms to operation ranged from 2 to
8 hours.

All patients except one presented a his-
tory of acute sudden pain in the upper abdo-

men, associated with nausea. Vomiting occurred in seven. The pain was excruciating, the patient presenting a picture of prostration and collapse, and the skin was cold and clammy. We have noted no marked change in blood pressure as one would ordinarily expect with these symptoms and signs.

The board-like abdomen is characteristic and, when combined with the above symptoms, plus the x-ray evidence of air beneath the diaphragm, confirms the diagnosis.

Simple closure of the perforations has been done, antibiotics being used in all cases. Those treated conservatively received gastric suction, fluids intravenously, antibiotics, and opiates for pain.

ACUTE INTESTINAL OBSTRUCTION

In this group we have placed small and large bowel obstruction due to various causes; also obstruction caused by strangulated hernia.

Seventeen cases of bowel obstruction due to strangulated hernia comprised the largest group. Ages ranged from forty-two to eighty-five years, and the duration of symptoms ranged from 2 to 24 hours. In all these cases an attempt was made to reduce the hernia manually. This was successful in six instances and, of course, operation was refused by the patients.

Strangulated inguinal hernias twelve, reduced four.

Strangulated umbilical hernias five, reduced two.

The remaining eleven cases (eight inguinal and three umbilical) were reduced and repaired under local anesthesia. No resection of bowel was required. In three of the inguinal cases in males at the upper age range, the testicle and spermatic cord on the affected side were removed to facilitate better closure of the large opening.

Seven cases of small bowel obstruction were treated with a Miller-Abbott tube and received satisfactory results.

Three cases of large bowel obstruction due to neoplasm in the descending and sigmoid colon were treated by transverse colostomy as a palliative measure but subsequently died.

The mortality rate in this group was 9 per cent.

ECTOPIC PREGNANCY

Ectopic pregnancy comprised a total of only six cases and these all fell into the sub-acute hemorrhage class. We have not had a case with classical signs and symptoms of sudden abdominal pain, fainting, vomiting, small rapid pulse and subnormal temperature. The length of time of gestation varied from approximately 6 to 12 weeks. These cases all recovered uneventfully, following laparotomy and removal of the affected tube and contents.

CHOLECYSTITIS, ACUTE AND SUBACUTE

Of seventeen cases treated, seven had cholecystectomies and ten subsided to such an extent on conservative treatment that operation was not performed at the time. All these patients presented a previous history of gallbladder disturbance with mild to severe digestive symptoms. Gallstones were present in five of the operative cases.

ACUTE ABDOMINAL CONDITIONS PECULIAR TO WOMEN, EXCLUDING PREGNANCY

In this group, acute salpingitis and pyosalpinx are a definite problem. These patients are acutely ill, having severe pain, nausea and vomiting, and elevated temperature.

The differential diagnosis between acute salpingitis and appendicitis is sometimes difficult to make. However, the diagnosis is usually confirmed if pelvic examination shows tenderness and pain when the cervix is moved and when smears are positive. The majority of these cases clear up on antibiotics, and remain symptom free. However, we have found in our cases that about two per cent will return to the hospital in from 2 to 12 months with massive pyosalpinx, necessitating surgery.

TRAUMATIC ABDOMINAL INJURIES

This is the group that keeps the general practitioner in a small community up on Saturday nights. These cases comprised gunshot wounds, stab wounds, auto accidents with their combined abdominal and general injuries, and blunt trauma to the abdomen, as from kickings or falling on hard objects.

Our mortality rate in this group was thirty per cent. Ten gunshot wounds of the abdomen were seen. Five of these were moribund on arrival and died before anything

could be done despite transfusions and various other measures to combat shock.

Five gunshot wounds were treated (four of which were only single bullet wounds causing 2 to 4 penetrating holes in the intestines, and one a turkey hunter shot in the abdomen with buckshot, causing multiple intestinal wounds). The four single bullet wounds recovered uneventfully after surgery. The turkey hunter had a very stormy postoperative course because of associated chest wounds, but eventually recovered. One case, a physician with a subcapsular hematoma of the spleen and intra-abdominal bleeding, was treated conservatively for two days, then transferred to Mobile for possible surgery. However, conservative treatment was continued and he recovered.

One late perforating wound of the intestine, which occurred three days after blunt trauma, was operated on and recovered.

One stab wound of the transverse colon was operated on and recovered. Three cases of suspected intra-abdominal trauma were treated conservatively and recovered.

In conclusion, I would like to say a few words regarding conditions which may simulate acute abdominal conditions, such as pneumonia, food poisoning, cardiac diseases, diabetes, influenza, Brill's fever and acute porphyrinuria. These must always be kept in mind. Generally, if a thorough routine examination is made, these conditions will be brought to our attention and embarrassing situations avoided. However, it must always be remembered that patients with the above diseases may also have an acute condition in the abdomen. This may best be illustrated by my own experience of allowing a patient during a food poisoning outbreak to develop a perforated appendix under my very eyes.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case presentation by
Benjamin P. Clark, M. D.

Baby M. A. R., a four month old white infant, was admitted to the Holy Name of Jesus Hospital on April 25, 1951. The moth-

er stated that the infant had been ill for three or four days with increasingly high fever, cough, and listlessness. The mother stated that there had been no diarrhea. The patient had been treated by the family physician without improvement. An older sibling had died in another hospital and autopsy revealed "idiopathic congenital cardiac hypertrophy."

Physical Examination

Physical examination on admission revealed a temperature of 106.2 degrees. The patient was acutely and critically ill, cyanotic, dehydrated, and acidotic, with pin-point pupils, Kussmaul breathing, and extremely poor tissue turgor. The fontanelles were depressed. The lips and tongue were dry. The throat was not red and there was no rigidity of the neck. There were a few fine rales at each base but no dullness to percussion. There were no thrills or murmurs, and no cardiac enlargement could be detected by physical examination. The abdomen was not tender and there were no masses palpated. The knee jerks were active and the Kernig reflex was negative.

Laboratory Findings

The erythrocyte count was 4,510,000, hemoglobin 11 grams, color index 0.7, white blood count 21,200, with neutrophils 48% lymphocytes 50%, basophils 1% and plasma cells 1%. The urine showed 1 plus albumin, negative sugar, and a faint trace of acetone. There were a few leukocytes and a few coarsely granular casts.

X-ray examination of the chest showed a markedly enlarged heart with mottled parenchymal infiltration about the right hilum. It was thought that the patient was suffering from pneumonia and she was given penicillin and aureomycin. On the day following admission to the hospital there was an increase in the rales, with expiratory wheezes over both lungs. The fever remained elevated to 102 to 104 degrees and the child died approximately 24 hours after admission to the hospital.

An autopsy was performed. The provisional anatomical diagnoses were:

Heart—idiopathic hypertrophy.

Lungs—partial atelectasis.

Peritoneal cavity—ascites.

However, when the microscopic sections were studied the true diagnosis came to light. Almost all of the muscle fibers of the heart were displaced by glycogen deposits. In the liver, which was only somewhat enlarged, there was an excess of glycogen storage.

This infant then had glycogen storage disease of Gierke. Two forms of this disease are recognized: the first, with the primary changes in the liver; and the second, with the primary changes in the heart. Our case falls into the latter, and rarer, group. Prior to 1932 these cases were usually diagnosed as idiopathic hypertrophy of the heart. Ellis and Payne believe that the disease is familial and that consanguinity may be a factor. There is a definite biochemical deficiency in the physiologic control of carbohydrate metabolism.

The hepatic type of glycogen storage disease is rare but is more common than the cardiac type and is much more easily recognized and studied. Symptoms are almost never noted during the first year of life. However, the cardiac type is characterized by enormous enlargement of the heart, with signs of circulatory decompensation in infants under two years of age. Symptoms may be noted as early as one month but not as a rule until after four months. The first symptoms are usually those of heart failure. Rapid respirations, edema and cyanosis are common. Weakness, lack of strength, and feeding problems may be noted prior to the onset of cardiac symptoms. An acute infectious process generally initiates the acute heart failure which progresses rapidly to death within a few days. It is said that hyperpyrexia may be present when there is glycogen infiltration or deposition within the brain substance.

None of the metabolic changes present in the hepatic type are found in the cardiac form of the disease. This may be explained by the fact that the liver exerts a marked influence over carbohydrate utilization of the entire body, whereas in the heart, glycogen is only a local source of energy. Chemical studies of the heart by various workers have shown it to contain 6 to 8% glycogen (normal 1%). Stability of the heart glycogen could be altered by the addition of muscle mash from a normal heart, indicating

that some factor was present in the normal heart but absent here.

It is believed that this factor is not insulin since insulin produces very little increase in cardiac glycogen and such increase is not associated with heart failure as in glycogen storage disease.

The diagnosis in the cardiac form can be suspected in life, but can only be proved by autopsy since the disturbances in carbohydrate metabolism seen in the hepatic form of the disease are not present in the cardiac type. Muscle biopsy may strengthen one's suspicions. Signs of cardiac failure with cardiac enlargement in an infant under 18 months of age are suggestive, if murmurs are absent. The same clinical signs may be caused by congenital malformations, "primary" carditis, pericarditis, aortic atresia and rhabdomyoma. Further study of heart, skeletal muscle, liver and kidneys should be made in suspected cases to further our knowledge of the disease.

Treatment is completely unsatisfactory. Prevention of intercurrent infections in a child suspected of having this disease may delay the onset of acute heart failure. Digitalis is of doubtful benefit.

Thoracic Surgery—In the last few years there have been continued advances in operations on the lungs and pleura. Antibiotics have had a profound influence. The thoracic surgeon has aimed more at conserving pulmonary function as well as further lowering morbidity and mortality.

The incidence of pulmonary abscess has been lowered by antibiotic treatment of early inflammatory processes. The management of a pulmonary abscess consists of intensive antibiotic treatment in the acute stage, and, if healing does not occur, surgical excision of the permanently damaged part of the lobe or lung.

Pulmonary resection plays an important role in the treatment of bronchiectasis. The development of surgical techniques which permit the removal of any individual or combination of pulmonary segments has permitted more conservation of pulmonary tissue and further extension of surgical treatment in cases of bilateral lesions.

Many articles have been written on the surgical treatment of so-called cystic disease of the lung. A review of the literature indicates much confusion because of inadequate correlation of clinical and pathological features. Many such lesions are well treated surgically, but it is important that localized obstructive emphysema, such as follows staphylococcus pneumonia in infancy and childhood, not be subjected to surgical excision, since such lesions usually disappear spontaneously.—Maier, *California Med.*, Dec. '51.

Urinary Frequency in Women—The management of urinary frequency in women in the presence of acute infection ordinarily presents little difficulty with the antibiotics now available. The most encouraging results have been reported with aureomycin, chloromycetin and terramycin. It is well to keep in mind, however, that some of these preparations have side effects which may be more distressing than the patient's original complaint. Detailed inquiry regarding possible history of ulcer or other gastrointestinal difficulty, particularly when one is anticipating the use of aureomycin, may save considerable anxiety and unnecessary complications. Within the last year we had a patient who, on questioning, failed to give us a history of duodenal ulcer, and during the course of his convalescence aureomycin was given orally. His progress was entirely satisfactory until the day before his anticipated dismissal, at which time a severe hemorrhage occurred, which was uncontrollable, and the patient expired. An autopsy was obtained and revealed a large ulcer crater with an eroded artery in its center which had produced the fatal hemorrhage.

Since the advent of the newer preparations, some are prone to overlook the commoner less expensive sulfonamides which, many times, will prove just as effective as the more expensive antibiotics. Penicillin as a routine medication in chronic infection of the urinary tract has not proved as satisfactory as many other forms of therapy. Ordinarily, in infections of the urinary tract, heavy dosages are not necessary. In a control series several years ago at Duke University there was no appreciable difference in the results obtained following high concentration of sulfonamides and those from minimum dosage.

In examination of the urine of a patient with frequency, the hydrogen ion concentration may be an important causative factor, particularly here in Florida, as many winter visitors enjoy their annual citrus juice allotment in a concentrated two or three week interval. Oftentimes this excessive intake results in highly alkalized urine which may be the sole factor responsible for frequency with attendant dysuria.

As most of the patients experiencing chronic frequency have a cicatricial granular urethritis, treatment ordinarily must be directed toward the urethra. Urethral dilatations at weekly intervals, until a 34 French sound can be introduced, combined with irrigations of the bladder and endoscopic treatments, have proved efficacious in most instances.

There are some who advocate fulguration of the urethra and vesical outlet under anesthesia, and this method has met with considerable success as reported by Spence and others. Gentleness must be exercised in urethral dilatations, or the patient will experience aggravation of symptoms rather than improvement. Office management of the majority of these patients is easily carried out, and topical anesthesia, using metycaine solution in the bladder with cocaine jelly applied to the urethra, is well tolerated and

eliminates much of the discomfort of the treatment.—*Hayward et al., J. Florida M. A., Nov. '51.*

Jaundice in the Newborn—In obstructive jaundice of the newborn, the fault is in the biliary system. This may be a congenital atresia or congenital absence of the bile ducts, or other type of malformation. At times the jaundice may be caused by a plug of inspissated mucus or bile. The infant's general condition may be good. He eats well and seems vigorous and alert. Constipation is common. The jaundice appears soon after birth and increases in intensity. The icteric index becomes markedly elevated. Eventually the child becomes worse and develops roughened skin and ecchymoses. Evidences of fat-soluble vitamin deficiency appear. The liver is always enlarged and later the spleen becomes palpable. The stools are clay colored. When the jaundice is extreme, the body tissues may be so stained with bile that the intestinal mucosal secretions are bile-tinged thus imparting some color to the stool. This might be confused with true fecal bile pigment and tend to lead one away from the diagnosis of biliary obstruction. At first there is no fever, but as the condition progresses the infant usually develops infection and fever. Ascites is common. The prognosis is poor. If no treatment is instituted the infant rarely survives more than five or six months. The treatment consists of a low fat and high vitamin diet with adequate fluid intake. Early in the disease it is wise to instill 10-15 cc. of 25% magnesium sulfate solution into the duodenum through a tube. This will usually dissolve and clear up any inspissated plug. Improvement is often rapid. If no improvement is seen in four or five days, surgery is indicated for exploration and correction of any malformation. Surgery is best done around four weeks of age and can correct the abnormality in about 20% of the cases. In the majority of instances the malformation is such that nothing can be done.

Jaundice due to sepsis of the newborn is becoming less and less common. Biologically the infection is usually due to the colon bacillus which acquires entrance through an infected umbilical stump or circumcision wound. The symptoms are variable. They may be fulminating with all the evidences of an acute infection, or there may be no definite symptoms. There may be no fever. One may see only a baby who is not gaining well, who refuses to eat, or who is very lethargic, and, later in the newborn period, begins to develop jaundice of the hemolytic type. The liver and spleen enlarge, jaundice increases, and nervous manifestations such as restlessness, irregular respirations and convulsions may develop. Diagnosis is established by a positive blood culture, and treatment consists of the use of antibiotics and supportive measures. The antibiotic to be selected will depend on the type of bacteria present. Other measures include small blood transfusions, adequate fluid balance, . . . and the local care of any focus of infection which can be found.—*Shapero et al., J. Maine M. A., Dec. '51.*

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STEATORRHEA FOLLOWING THE USE OF ANTIBIOTICS

"In the last two years several new antibiotics have become available. Three of these, aureomycin, chloramphenicol and terramycin, affect a wide range of bacteria and, since they are effective orally and are reputed to be without serious toxicity, have been widely used. It is generally known, however, that they may produce black tongue, vaginitis, pruritus ani and proctitis. More recently Woods and his co-workers contributed greatly by pointing out the occurrence of prolonged diarrhea and pulmonary disease following the use of antibiotics."

Thus do Merliss and Hoffman¹ open their brief but excellent discussion of this subject. The Los Angeles investigators report four cases of their own and go on to tell us that "These cases, in addition to the 4 previously reported cases, establish an etiologic relation between prolonged diarrhea and the administration of certain antibiotics. The antibiotic agent may be either aureomycin, terramycin or chloramphenicol. Furthermore, in one of the cases presented here the causative drugs were penicillin and sulfonamide in combination. This suggests that the controlling factor is not the specific agent used but rather the range of bacterial destruction in the gastrointestinal tract. Penicillin, the sulfonamides and streptomycin, which do not affect many common forms of bacteria, are alone apparently not sufficient to precipitate this syndrome.

"The seat of the diarrhea is clearly the small bowel. The presence of fat in the stools, the tendency of the diarrhea to be aggravated by fat ingestion, and the relatively mild nature of the diarrhea are features that are commonly seen in steatorrhea from small-bowel dysfunction. Moreover, in 3 cases x-ray findings pointed to the small bowel as the source of the diarrhea.

"The close parallel between these cases and acute tropical sprue is at once apparent. The major features lacking are the secondary deficiency signs and macrocytic anemia. This is probably due to both the short duration of the diarrhea and the high quality of

1. Merliss, Reuben R., and Hoffman, Arthur: Steatorrhea Following the Use of Antibiotics, New England J. Med. 245: 328 (Aug. 30) 1951.

the food eaten by these patients, since, with one possible exception, all the patients are in adequate economic circumstances."

The Los Angeles investigators go on to tell us that "It is known that certain vitamins of the B complex, including folic acid, are produced by bacterial activity in the gastrointestinal tract. It seems likely, therefore, that the deficiency causing this syndrome is due to wholesale destruction of intestinal bacterial flora.

"This syndrome can probably be prevented by the parenteral administration of liver to all patients who are receiving chloramphenicol, aureomycin, terramycin or penicillin-sulfonamide combinations for more than a few days. Parenterally-injected liver is to be preferred to the oral preparations, as in our experience it has shown a much more rapid and pronounced effect."

And we are further told that "Historically, the toxic effects of a drug have usually not become generally known until some time after its beneficial effects have been shown. Thus, it was a number of years after the introduction of aminopyrine that physicians became aware that it could produce agranulocytosis. Cinchophen was in common use for a long period before its hepatotoxic effects were known. This has been true, although to a lesser extent, of both penicillin

and the sulfonamides. Consequently, any new drug should be regarded as a tool of uncertain potentialities, and it should not be used to treat light and insignificant ailments."

In conclusion, the authors tell us that "Prolonged diarrhea may follow administration of chloramphenicol, aureomycin, terramycin or penicillin-sulfonamide combinations. The diarrhoea closely resembles and is apparently identical with the diarrhea of the sprue syndrome. It is probably due to a deficiency state secondary to the destruction of the normal intestinal flora. The diarrhea responds readily to parenterally administered liver, in conjunction with ingestion of B vitamins."

Thus we are brought face to face again with the disagreeable but ever-present fact that many or most drugs are more dangerous or potentially more dangerous than is frequently realized. This applies especially to recently introduced therapeutic agents. The antibiotics have proved and are continuing to prove themselves to be among the greatest and most powerful additions to our therapeutic armamentarium. No informed person will decry the sensible and proper use of antibiotics, but it is certainly incumbent upon us to bear in mind their possible dangers and to employ them with discretion.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THAT SHORTAGE

W. A. Dozier, Jr.

Director of Public Relations

One of the most frequently repeated statements is that the doctor shortage is very acute and from all indications it will probably get worse. Of course this is one of the chief claims made by the present national administration. From there it is an easy step to advocating that something be done about it. Very often, also, one hears various members of the medical profession make the same claim. This writer does not know whether there is an actual shortage of physicians or whether there is just an objection

on the part of the public to the changes which are occurring in medical practice and that this objection is being manifested through a claim and an honest belief that there is a shortage of physicians.

The following paragraphs do not presume to answer the question as to whether a shortage actually exists or not. The aim here is merely to state a few facts, figures, and notions which should be considered in the over-all picture. Statistically speaking, the belief that the population is increasing much faster than the number of physicians cannot be supported. The figures show a slightly faster increase in the population but not to the extent one might be lead to be-

lieve. In 1920 there were 144,977 physicians for a population of 105,710,620 persons, while in 1950 we had 201,277 physicians for an estimated 153,000,000 persons. In other words the gain in population for that thirty year period was 45 per cent, and the gain in the number of physicians was about 39 per cent. Stated another way there was in 1920 one physician for every 729 persons, and in 1950 there was one physician for every 760 persons.

One point that is of importance to the shortage picture may be derived from the recent survey of physicians' incomes. Dr. Frank Dickinson in analyzing the returns from the survey found that the increase in physicians' incomes had merely kept pace with the inflation spiral. Had there been the real shortage claimed, it is highly probable that this increase in income would have outdistanced the spiral of inflation that we have all felt recently.

One must also consider the fact that the physician of today is far better trained than was his counterpart thirty years ago. During the intervening years medical science has progressed very rapidly and these better trained physicians have kept abreast of these advances. Also much more assistance is gotten from the medical team. The nurses, technicians, and other ancillary personnel and equipment are able to relieve the physician of many of the routine jobs that he would have had to perform personally thirty years ago.

The matter of time is important here. Of course it plays in the picture presented in the foregoing paragraph, but of even more importance is the present day use of the hospital. If a physician can have many of his patients under one roof, he is thereby able to save his travel time from home to home.

Closely allied to the time element, in fact a part of it, is modern transportation. Automobiles traveling over improved roads put rural dwellers far closer to a physician, who may be a greater distance away, than they were thirty years ago. In fact many rural people whose area has no resident physician are closer in point of time than are many urban dwellers of today.

What do all these facts, figures, and notions add up to? Perhaps nothing. They merely point out some features that need to

be considered. However, it is realized that they dwindle to nothingness in the mind of a patient when he has a bellyache in the middle of the night. What he wants then is a physician to relieve his pain—both physical and mental.

Rest in Congestive Heart Failure—The treatment of congestive heart failure necessitates the use of bed rest. Since these patients are already dyspneic, it is apparent that they must not be placed flat in bed, but rather should be allowed to sit in a semi-reclining position, or, if necessary, to sit in a chair with their feet elevated on an ottoman. Under no circumstances should the patient be expected to use a bedpan, for the effort of having the patient use a portable or a bedside commode is far less than any effort that can be expended on the use of the bedpan. Patients are maintained at bed rest until they are fully compensated or at least until the compensation has reached its maximum. At the end of this time, patients are permitted up on graduated exercises. They are first permitted to sit on the edge of the bed, dangling their feet for ten minutes four times a day. If no untoward symptoms appear at the end of two days, they are then allowed to sit in a chair for fifteen minutes four times a day. Should this cause no difficulty the patient is then permitted to sit up in a chair for one-half hour four times a day. Should this not cause difficulty, then the patient may be up at the end of another two days 45 minutes four times a day. There is a gradual increase in the length of time that the patient may sit up during the day, depending entirely on whether any untoward sign or symptom results from the increase in activity. When he is able to sit up approximately six hours daily, it is felt then that maximum timing has been reached and the patient then can be placed upon his own judgment as to the length of time that he may sit up. He is warned, obviously, about fatigue, precordial pain, and any unusual symptoms that may occur. During the time of the graduated exercises the patient is permitted to go to the bathroom if it is on the same floor or in the same room. In addition, he is permitted to walk one-half block three times a day for three days. If there are no unusual symptoms because of this exercise, he may then walk one block three times a day for three days. He is gradually increased in this activity until he is walking essentially one mile three times a day. If at the end of this time he has no difficulty, then one can assume that he can increase his own activity according to his own needs and desires.—*Briggs, Minnesota Med., Nov. '51.*

ANNUAL MEETING

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APRIL 17, 18, 19

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BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

JOBS FOR THE PHYSICALLY HANDICAPPED

This is not the story of John Smith. It is the story of a handicapped man who no doubt would be greatly embarrassed to have his troubles made public in this way. So this is a story of a man named somebody else but whose pride and dignity we shall protect by calling him John Smith.

Miss Mary E. Switzer tells us about this John Smith who isn't John Smith. She gives his story in *Industrial Health Monthly*, a publication of the U. S. Public Health Service. It should do much to make easier the troubled, rocky pathway of the physically handicapped, she hopes. So do many others.

John Smith was a worker in a cement plant. His particular job was that of a kiln burner. A faithful employee, he was with the same concern for 20 years. That was a good record and one that this John Smith or any other John Smith—or Tom Jones or Bill Brown or anybody else—might well have been proud of.

But, after all those years of faithful service, John Smith had to give up his job. As eager and ambitious as ever, he nevertheless had no choice. His feet began giving him trouble, a little bit at first and then gradually more and more. Unfortunately for him, his work was almost entirely a stand-up job. He had to be on his feet during the full eight-hour stretch. And at last he simply could not stand up that long. So John Smith and the company he had worked for so long parted company, pleasantly and amicably but with a great deal of sadness on both sides. The company was sorry to lose a good worker. And, besides, its executives felt sorry for John. And of course John Smith had plenty to be sad about. You can't leave an organization where you've been working most of your working life without a severe pang or two. And, in a less sentimental sense, John Smith faced a pretty un-

sentimental, grim financial problem. As long as you work, you have a steady income, usually enough to keep your head above water financially. But, when you quit work, that nice stream of money stops flowing your way. Even if you are fortunate enough to receive some kind of retirement or disability income, it usually is only a fraction of what you earned when working as a full-time employee. Miss Switzer doesn't tell us whether our disabled cement plant worker even had that much solace for his enforced retirement. In either case, that day he quit work was a pretty sad day for him.

But John Smith was not willing to give up without a struggle. A man who couldn't work eight hours at a stretch on his feet might be able to work for a shorter period at the same or some other kind of job. So he made the rounds of the plants. He was pretty lucky too, for he managed to get a number of part-time jobs. But there was still a big gap between his income and living expenses. After a while his life savings, his last line of defense against actual want, were exhausted. Unfortunately, he did not stop there on the downward journey. He required considerable medical attention and before long found himself with a \$700 medical bill. He began losing a great deal of sleep worrying about losing his home.

Apparently, John Smith had never heard about the vocational rehabilitation agencies maintained to help people just like him. Or, if he knew about them, he probably thought he was not eligible for their help. So he did not think of any of them as perhaps an answer to his great and growing need.

But he and his state vocational rehabilitation agency were brought together after so long a time. Then things began to look up for John Smith.

About the first thing that happened after he visited that agency's headquarters was to get a complete physical examination. That of course was to find out exactly what was wrong with him. Knowledge of that

kind was needed before those eager to help him could do so.

That examination made some disturbing but not too serious revelations. The main trouble with him, he was told, was that he had arthritis. An x-ray examination of his feet revealed that he also had a small bony spur on each heel. When his eyes were examined, it was shown that his vision was not up to normal.

Suppose we let Miss Switzer take John Smith's story at this point and finish it. She wrote:

"Therapy which would be administered at home was prescribed and foam rubber insoles with a small hole cut in each heel beneath the bony spurs completed the treatment. In less than three months John Smith was back at work at the plant where he formerly was employed. He since has been promoted to head burner at a sizeable increase in pay."

And what do you think it cost, in dollars and cents, to perform this great rehabilitation service for John Smith? The whole cost, including a pair of eye glasses, was \$59.

John Smith is, or rather was, one of a surprisingly large company. It is estimated on official authority that there are more than two million Americans with correctable physical handicaps sufficiently serious to prevent them from engaging in gainful employment. All that is needed, we are told, is to give them the benefit of corrective measures and procedures which are now beyond their financial reach. If every one of them could be restored to a wage-earning status, we are told, the manpower shortage that is now handicapping our defense program would be eliminated. For the labor shortage is estimated, too, at about two million men and women. New additions are being made to this army of involuntary idle at the rate of about a quarter of a million a year. And all of these, remember, are within reach of rehabilitation. All that is needed is the ability to avail themselves of the latest knowledge and most modern facilities for making the unemployable employable.

I am sure you will agree that this a frightful waste of valuable manpower and womanpower. That is especially true at a time like this, when our defense machinery is straining to do what is demanded of it and "Workers Wanted" signs are sprouting around factories and other industrial estab-

lishments all over the country. Something certainly needs to be done about it.

But there is another aspect of the physical disability problem that also calls for our sober attention. While we are doing everything we can to get the physically handicapped back to work, let us not lose sight of the importance of keeping the unhandicapped workers unhandicapped. Here is another case in which prevention is much better than cure.

Let us refer again to Miss Switzer, who is director of the Federal Security Agency's Office of Vocational Rehabilitation. She wrote:

"Every program of occupational health has a stake in rehabilitation and its techniques. There is a natural and basic community of interests between occupational health and vocational rehabilitation. Both are concerned with proper placement of workers on the job, including the evaluation of physical and emotional requirements of the job and the physical and emotional capacities of the worker. Both are devoted to the principle that an ill or injured worker should be returned to work as speedily as possible, consistent with sound medical judgment, if not to the same job, to *some* job."

And what are the chances for substantial improvement in workers' protection against avoidable illness and injury? You will be glad to know that they are good, in fact excellent. Much has already been accomplished. Much can still be accomplished. Again let us turn to Miss Switzer's article:

"Comprehensive health and safety programs in industry already have reduced sharply the man-days lost from industrial accidents and illness. Time lost from work due to non-industrial sickness is 10 times more costly to employees and management than that caused by industrial accidents—a fact well known to all health workers, in and out of industry. This time lost probably can be cut from one-third to one-half by sound health programs. Through the use of rehabilitation services, a still further reduction of costly absenteeism can be affected."

Unfortunately, the person with a physical handicap has a double struggle on his hands. He not only has to fight against the handicap itself. He also has to face a firmly planted prejudice against employment of those with histories of handicapping conditions. It is grimly true that many employers are more interested in physically perfect bodies than they are in loyalty, devotion to duty, exceptional personal efficiency and any number of other normal marks of the superior worker.

That is particularly true in normal times of course. When the labor market is glutted, a man with a job, or a thousand jobs, can pick and choose. He can set up and enforce standards that are as arbitrary as they are unfair. He can turn a would-be employee down for almost any reason, including imperfect health.

That is less true, fortunately, in times like the present, when the labor market is "tight." At such a time, the shortage is not of jobs but of men and women to fill them. Then the employer cannot afford to be so choosy. He has to accept workers who cannot meet his arbitrarily high physical standards of normal times. It is then that the physically handicapped get a "break."

"As our search for skilled hands intensifies," Charles E. Wilson, director of the Office of Defense Mobilization, declared some time ago, "let us not look upon the physically handicapped as the blind, the deaf, or the lame, but as mechanics, machinists, and carpenters; as competent, skilled workers who constitute an indispensable element in our defense program. The handicapped have proved that their abilities outweigh their disabilities. To fail to put them to work on jobs for which they are qualified is a waste that this Nation cannot afford."

Unfortunately, however, as already pointed out, many employers still are unwilling to "play ball" with Mr. Wilson and others who insist that there is a lot of valuable work in most persons with physical handicaps. That is why the physically handicapped would-be worker often finds himself—or, in many instances, herself—turned down for jobs that he—or she—could do much better than those who get them. But there is a weighty body of evidence in those handicapped workers' favor.

A case in point is a two-year study conducted in Sweden some time ago. After it was over, Bert Hanman, who directed it, came out flat-footedly with the statement that, with proper regard to fitting the right man for the right job, there was some sort of job for practically every would-be jobholder. And that meant the physically disabled as well as the person in good health, he emphasized.

Mr. Hanman readily conceded that a physically handicapped person might, and prob-

ably would, be unable to engage successfully in a number of kinds of work. Nevertheless, he declared, the individual worker had physical abilities—as opposed to physical disabilities—sufficient in number and capacity to fit him for numerous jobs.

The New York Times is one of a number of influential voices that have made eloquent pleas in behalf of the handicapped job-seeker. And *The Times*, like so many other pleaders for this cause, has built its fortress of reasoning on a solid foundation of fact. It declared in an editorial:

"It has been the experience of progressive companies that make a practice of employing the handicapped that their work is often more satisfactory than that performed by the unhandicapped. For example, one corporation reports that the rejects from the blind operators average only one-tenth of one per cent, while those from its normal employees are 'sometimes as high as seven per cent.' The reasons are not hard to find."

The Times editor went on to discuss those reasons:

"In some cases the blind or the deaf are better suited, by virtue of their very affliction, to doing work under conditions—in the dark, for instance, or at noisy machines—that those with sight or hearing find oppressive or discouraging. In many cases a person unable to walk develops great strength or dexterity with his hands and fingers. In most cases the handicapped has greater interest in and appreciation of the job for which he is trained than the normal worker."

The physically handicapped deserve a chance. We are short-sighted if we refuse to give it to them. It is to the advantage of all of us to tear down the barriers of prejudice and ignorance. They have stood far too long already.

Massive Gastro-Intestinal Hemorrhage—Massive hemorrhage from the gastro-intestinal tract is a serious complication that should never be treated lightly. The natural tendency of many hemorrhages to cease spontaneously does not lessen its seriousness. At times a mild hemorrhage develops into a more serious type so that constant vigilance for at least seventy-two hours is very important.

The important part of any form of treatment is to have a definite plan and to have constant team-work between the internist, the laboratory, and the surgeon. We must be systematic and individualize treatment for each case, because even though many cases may be similar in some respects they all vary so that no routine type of treatment can be employed.—*Sachs, Nebraska M. J., Dec. '51.*

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

November 1951

Examinations for diphtheria bacilli and Vincent's	543
Agglutination tests (typhoid, Brill's and undulant fever)	711
Brucella cultures	13
Typhoid cultures (blood, feces and urine)	660
Examinations for malaria	932
Examinations for intestinal parasites	4,686
Serologic tests for syphilis (blood and spinal fluid)	21,817
Darkfield examinations	10
Examinations for gonococci	1,543
Examinations for tubercle bacilli	2,792
Examinations for Negri bodies (microscopic)	68
Water examinations	1,419
Milk and dairy products examinations	4,393
Miscellaneous	4,108
Total	43,695

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1951

	Sept.	Oct.	E. E.* Oct.
Typhoid and paratyphoid	8	3	6
Undulant fever	7	2	0
Meningitis	7	11	6
Scarlet fever	29	30	87
Whooping cough	51	40	52
Diphtheria	32	65	126
Tetanus	3	4	3
Tuberculosis	218	176	227
Tularemia	0	1	0
Amebic dysentery	6	2	2
Malaria	9	15	113
Influenza	98	65	78
Smallpox	0	0	0
Measles	24	35	11
Poliomyelitis	157	56	12
Encephalitis	7	4	0
Chickenpox	8	13	13
Typhus fever	5	3	25
Mumps	44	33	22
Cancer	436	473	270
Pellagra	1	0	3
Pneumonia	61	62	113
Syphilis	278	485	1507
Chancroid	11	15	27
Gonorrhea	397	294	599
Rabies—Human cases	0	0	0
Positive animal heads	19	28	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS
Ralph W. Roberts, M. S., Director
PROVISIONAL BIRTH AND DEATH STATISTICS FOR AUGUST 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During August 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	7554	**	**	28.8	29.2	29.7
Total stillbirths	202	**	**	26.0	24.3	27.3
Deaths, stillbirths excluded	2144	1277	867	8.2	7.8	8.2
Infant deaths— under one year	248	130	118	32.8	34.0	39.9
under one month	177	100	77	23.4	24.9	28.9
Cause of Death						
Tuberculosis, 001-019	66	27	39	25.1	26.5	27.4
Syphilis, 020-029	3	2	1	1.1	5.0	5.0
Typhoid and paratyphoid, 040, 041	1		1	0.4		
Dysentery, 045-048	4	2	2	1.5	1.9	3.5
Diphtheria, 055	2	2		0.8	0.8	1.2
Whooping cough, 056	6		6	2.3	1.9	0.4
Meningococcal infections, 057	2	1	1	0.8	0.4	
Poliomyelitis, 080, 081	13	13		5.0	1.5	0.8
Encephalitis, 082, 083	2	2		0.8		
Measles, 085						1.2
Typhus fever, 100-108					0.4	
Malaria, 110-117					0.4	1.2
Malignant neoplasms, 140-200, 202, 203†	210	153	57	80.0	92.5	79.2
Diabetes mellitus, 260	29	21	8	11.0	8.4	6.2
Pellagra, 281	1		1	0.4	0.4	1.2
Vascular lesions of central nervous system, 330-334	261	135	126	99.4	82.5	75.0
Other diseases of nervous system, 300-318, 340-398	30	19	11	11.4	6.9	16.6
Rheumatic fever, 400-402	5	1	4	1.9	1.9	1.2
Diseases of the heart, 410-443	670	428	242	255.1	217.5	243.1
Diseases of the arteries, 450-456	25	15	10	9.5	6.1	8.9
Other diseases of the circulatory system, 444-447, 460-468	25	16	9	9.5	12.7	11.6
Influenza, 480-489	7	2	5	2.7	2.3	1.9
Pneumonia, 490-493	53	28	25	20.2	26.1	20.1
Bronchitis, 500-502	2	1	1	0.8	0.4	0.4
Appendicitis, 500-553	2	1	1	0.8	2.7	3.9
Intestinal obstruction and hernia, 560, 561, 570	10	6	4	3.8	6.1	8.1
Gastro-enteritis and colitis (under 2) 571.0, 764	18	5	13	6.8	4.2	14.7
Cirrhosis of liver, 581	10	8	2	3.8	3.1	5.4
Diseases of pregnancy and childbirth, 640-689	16	6	10	20.6	17.9	16.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	1	1		1.3		3.8
Congenital malformations, 750-759	37	29	8	4.9	3.2	3.9
Accidental deaths, total 800-962	161	110	51	61.3	69.1	59.9
Motor vehicle accidents, 810-835, 960	82	63	19	31.2	25.7	24.0
All other defined causes	373	207	166	142.0	146.2	168.1
Ill-defined and unknown causes, 780, 793, 795	100	37	63	38.1	39.5	39.4

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the August report of the years specified.

**Not comparable or not available.

†Excluding Hodgkins' disease (201); leukemia, aleukemia (204) and mycosis fungoides (205).

BOOK ABSTRACTS AND REVIEWS

Practical Clinical Psychiatry. By Edward A. Strecker, A. B., A. M., Sc. D., Litt. D., LL. D., M. D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; Franklin G. Ebaugh, A. B., M. D., Professor of Psychiatry, University of Colorado, School of Medicine; Director, Colorado Psychopathic Hospital; Jack R. Ewalt, M. D., Professor of Neuro-Psychiatry; Administrator of Hospitals, University of Texas Medical Branch, Galveston, Texas. With section on Psychopathologic Problems of Childhood by Leo Kanner, M. D., Associate Professor of Psychiatry, Johns Hopkins University, School of Medicine. Cloth. Price, \$7.00. Pp. 506 and illustrations. The Blakiston Company, Philadelphia, 1951.

Twenty-six years of existence through seven editions testify not only to the general merits and acceptance of this text but also to the unswerving determination of its authors to keep the material freshened, if not fresher. The new edition boasts of a revised section on classification which, while being current, appears to be needlessly comprehensive despite the acknowledged confusion that exists in this field. The new chapter on general or "support" therapy is a significant addition since, as the preface indicates, the bulk of psychotherapy will continue to remain in the province of the general practitioner who should be familiar with these more superficial therapeutic techniques.

Old weaknesses of the book persist, the most glaring for this reviewer being the lack of balance in emphasis. It is felt that a disproportionately large section of the book is devoted to the "organic," "toxic" and "traumatic" reaction types. More attention to the various personality disorders would broaden the coverage to include an oft-neglected though frequent citizen of the medical waiting room.

The book's virtues continue to rest in its practical approach, its case histories, the section on problems of childhood, the currency of its bibliographic references, the aggregate clinical experience of the authors which emerges unselfconsciously throughout, and the selective integration of analytical and psychobiologic disciplines at a physical if not a chemical level.

This continues to be a good book and its new edition will not yield its position of prominence on the shelves.

Philip S. Bazar, M. D.

Let's Have Healthy Children. By Adelle Davis. Cloth. Price, \$3.00. Pp. 314. New York: Harcourt Brace & Company, 1951.

The author of this current book discusses "Diet Does It" from before conception through feeding the preschool child.

In the opinion of this reviewer, complications during pregnancy are in the medical field and

should be discussed by a member of the medical profession.

Such statements as: "If your baby is to be beautiful, he must be given vitamin D," "Lack of graciousness in the home can be the result of an inadequate diet just as much as can an infant born in poor physical condition," "Nausea (during pregnancy) appears to result principally from an undersupply of protein and of the B vitamins," and "Fresh and powdered milk are the only dependable sources of calcium" are not only misleading but unsound.

It probably would be less confusing to patients if all food and nutrition specialists accepted the dietary allowances recommended by the National Research Council instead of each making his or her own allowance recommendations as is the case in this book.

The author gives "Five Wonder-Foods"—blackstrap molasses, yogurt, brewers' yeast, wheat germ, and vitamin capsules—another irresistible glamour boost.

Whether the subject matter as a whole is scientifically sound or unsound, this book gives many helpful suggestions and should stimulate constructive thinking.

Amanda Tucker, M. A.

Immunology. By Noble Pierce Sherwood, Ph. D., M. D., F. A. C. P. Third edition. Cloth. Price, \$8.00. Pp. 731, illustrated. C. V. Mosby Company, St. Louis, 1951.

The reviewer read with interest Sherwood's new edition of Immunology. Indeed it brought back fond memories of undergraduate work at the University of Montana where the writer was exposed to the book in the form of mimeographed sheets.

Many revisions have been made in the present edition, presenting newer theories as to the mechanisms of immunity. In keeping with the organism "currently in style," the mechanism of infection, as well as nature of viruses, is excellently summarized and presented. The average practitioner should find this book especially interesting because of the clear and precise way in which different views as to the mechanisms of disease are presented, especially as related to pathogenesis. Of particular interest are the chapters on hypersensitiveness due to infection and significance of allergy. In two short chapters a world of information is presented, which can be of practical use to every practicing physician.

The bibliography at the end of each chapter presents numerous journals of significance where an individual who wishes to learn more about the history of some particular agent may readily obtain the information he desires. The RH and HR factors of human blood are summarized quite adequately in a short chapter and again the re-

viewer finds the selective list of references very useful. The flocculation tests in syphilis are presented adequately with a good discussion on the cardiolipin-lecithin antigen. One chapter is devoted to the complement fixation technique with emphasis on its use in diagnosis in bacterial diseases and syphilis. The reviewer, however, fails to understand why no space was devoted to the use of complement fixation tests in viral diseases since this application is bringing back complement fixation into popularity in the clinical laboratory.

This book is recommended without reservation for beginners in the study of immunology, for those who desire an adequate review of the historical and recent advances, and for everyday consultation by those actively engaged in the field.

Thomas S. Hosty, Ph. D.

A Textbook of X-Ray Diagnosis. By S. Cochran Shanks, M. D., Director, X-Ray Diagnostic Department, University College Hospital, London; and Peter Kerley, M. D., Director, X-Ray Department, Westminster Hospital, London. Second edition, volume II. Cloth. Price, \$15.00. Pp. 702 with 605 illustrations. W. B. Saunders Company, Philadelphia and London, 1951.

This volume of X-Ray Diagnosis is confined to the cardiovascular and respiratory systems. It is one of a set of four volumes. This is the third book issued in the series. A previous book on Diseases of the Abdomen and a second book on Bone and Joint Diseases have been reviewed. The final volume of this series will be devoted to the Head and Neck.

This is a long awaited book. This is the second edition of the highly reputed Shanks' Textbook of X-Ray Diagnosis. This volume is a standard text for chest x-ray. It is authoritative and well written. The illustrations are splendid. There is a roentgen illustration for practically every common heart and lung disease that one ordinarily meets in the practice of radiology.

This is a British book; but the bibliography, which is extensive, contains many references to the American and German literature as well as the British, so that the sum total is a book which very adequately covers the diseases of the chest, and which is brought right up to date with the most current radiologic literature of both the United States and the Continent.

The book begins with a discussion of an x-ray diagnosis of the heart. It explains the chambers of the heart, which are seen when the patient is fluoroscoped in the various oblique positions. It discusses the various factors causing displacement of the heart and the factors which cause enlargement of the heart. There are excellent illustrations and text on mitral stenosis and calcifications of the heart. The chapter on congenital diseases of the heart and aorta has been completely rewritten for this edition. It discusses congenital lesions in view of the recent work of Gross and Neuhauser on the surgical correction of certain congenital lesions such as patent ductus

arteriosus and coarctation of the aorta. In addition, this book discusses briefly the value of angiocardiology. The demonstration of contrast material in the various chambers of the heart and aorta, which actually demonstrates the size and shape of these chambers, is a procedure which is new and in which the field of radiology is going to make contributions in the explanations of congenital heart disease.

The section on diseases of the heart and aorta is in itself an excellent monograph and was written for the most part by Dr. Kerley.

Diseases of the pericardium are covered and the text points out how the use of the kymograph enables one to make a diagnosis of pericarditis.

Of tremendous value are the chapters on diseases of the lungs. Very few books are written that comprehensively cover the diagnosis of chest diseases. This is as complete a text as is available.

There is a discussion of the chest wall; followed by diseases of the diaphragm. The roentgen anatomy of the lungs is discussed carefully. This is of importance because, with the increased amount of chest surgery which is now being done, it is necessary for the radiologist to localize accurately the diseases and tumors of the bronchi in lung segments. The broncho-pulmonary segments are detailed so that a lipiodal bronchogram can be appraised.

Diseases of the bronchi include a discussion of bronchography.

The roentgen aspects of the various pneumonias are detailed. A section on trauma to the lungs is of importance now with the increase in automobile accidents and military injuries.

There is a detailed section on the occupational diseases of the lungs. There is similarity between silicosis and some of the less common conditions of the lungs such as sarcoid disease, hemosiderosis and the numerous groups of dusts which cause a pulmonary picture so similar to silicosis. Beryllium poisoning produces a pneumonitis seen in people who work in factories which produce fluorescent lighting fixtures.

The section on tuberculosis of the lung does not follow the American classification. The description is based upon the pathology of the process rather than the extent of involvement. There are separate chapters on adult and childhood tuberculosis.

The section on tumors of the mediastinum is most excellent. The illustrations in this chapter depict the common diseases creating problems in roentgen diagnosis, as well as some of the rarer diseases which are not to be overlooked.

Increased incidence of carcinoma of the lung makes us now very acutely aware of the roentgen aspects to obtain an early diagnosis if possible. Bronchogenic carcinoma and its associated atelectasis, emphysema, and cavitation are discussed and differentiated from the benign tumors of the lungs such as bronchial adenoma and hamartoma.

This edition contains a new chapter on the

x-ray appearance of the lungs following surgical procedures. For example, pneumothorax is detailed and discusses the movements of the mediastinum, paralysis of the diaphragm by phrenic crush, the complications of lobectomy and the need of the radiologist to appraise the complications in the remaining lung tissues is of importance to the surgeon.

This is not a criticism but an enthusiastic praise for a good book on an important subject. With the popularity of chest surveys, more chest x-ray examinations are now being made than ever before in the history of medicine. It requires radiologic knowledge and recognition of many diseases, common and uncommon, which may appear on the chest roentgenogram to enable an early diagnosis so that our new methods of therapy can be effective. More can happen to a chest than just pneumonia. Whoever interprets chest x-rays should be familiar with this most excellent volume.

Howard J. Goldstein, M. D.

Clinical and Roentgenologic Evaluation of the Pelvis in Obstetrics. By Howard C. Moloy, M. D., M. Sc., Assistant Clinical Professor of Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University. Paper. Price, \$2.50. Pp. 119, with 145 illustrations on 68 figures. W. B. Saunders Company, Philadelphia, 1951.

Though small, this book is a thorough study of the pelvis as related to obstetrics. Moloy and his group have changed many concepts about the pelvis and its measurements and this book is a summary of their work. The first half of the book is a discussion of the general morphology of the pelvis and a description of the classical types. Ten pages are devoted to the technique of clinical examination of the pelvis. Then the position of the fetus and its relationship to the pelvis is discussed. The latter half of the book covers the mechanism of labor, forceps deliveries, breech deliveries, etc.

This book is well written by an outstanding authority in his field. It is a thorough and complete study of an interesting subject.

The illustrations, photographs, drawings, diagrams, and roentgenograms are unusually good and instructive.

This is an excellent book and should be read by all who are interested in the evaluation of the female pelvis.

Joe W. Perry, M. D.

Let's Cook It Right. By Adelle Davis. Cloth. Price, \$3.00. Pp. 639. New York: Harcourt Brace & Company, 1947.

The purpose in writing the book, according to the author, is in the hope of helping the application of nutritional knowledge keep pace with nutritional research.

Suggested variations of recipes to suit the needs of the family is worth while, as well as funda-

mental to good nutrition. Chapters 5 and 6 give interesting and helpful suggestions in motion economy that should be stimulating to busy homemakers.

The contents of the book probably would have been more reliable if the author had confined her material to a general cook book with less subject matter included.

Amanda Tucker, M. A.

Cervical Cancer—If the question is raised as to which procedure should be followed in the treatment of cervical cancer, the answer is not yet to be found in statistical analyses. From such data as are available there is rather striking similarity in results among the very early stages of involvement. Among the more advanced forms there is scarcity of surgical data, and many patients are those considered to be irradiation failures making a direct comparison unfavorable to operative removal. Perhaps some form of answer is to be found in criticism of methods of irradiation that have been employed. For the most part x-rays and radium have been applied empirically without any satisfactory degree of precision. Frequent tissue injuries and therapeutic failures are inevitable in such a system. Those untoward sequelae have prompted suggestion that clinical results have reached a plateau beyond which no further improvement is to be expected. There is no real evidence to support such a belief. Advance in knowledge in radiotherapy has established levels of dose tolerance for normal tissues, as well as for cancer cells. Technics have been devised for improving homogeneity in distribution of radiation applied to a tumor. Application of those data in clinical practice should result in improvement comparable to the advances that have been made in surgery.

The aim of radiation treatment is to deliver an adequate dose to the tumor-bearing region with a minimum of damage to normal structures, such as skin, bladder, bowel, vaginal mucous membrane, and tumor bed. The neoplasm simulates a foreign body, and as such incites reactions in the normal tissues of the host. Orderly regression involves the attainment of balance or readjustment between the host's tissues and the tumor. To produce the desired end result it is essential to know how much radiation will be required, and the effect to be expected upon all tissues. It is important to know the dose arriving at specified points representative of the whole, and finally to understand the effect of intensity of irradiation upon the biologic changes to be attained.

A system of dosage necessitates use of a unit for specifying amounts of radiation. The contribution from roentgen rays must be given in tissue roentgens arriving in the tumor rather than in "air" or in "skin" roentgens. The use of total milligram-hours of radium is totally inadequate for indicating tissue effects, but has assumed some general meaning in the treatment of cervical cancer.—Arneson, *New Orleans M. & S. J.*, December '51.

AMERICAN MEDICAL ASSOCIATION NEWS

NUTRITIONAL CARE OF BABIES NEGLECTED BY MANY PARENTS

Although babies of today are receiving far better medical and general care during their first months of life than they did 25 years ago, their nutritional well-being is frequently unwittingly neglected by parents after the first year, according to Drs. Julian P. Price and Walter M. Hart, pediatricians of Florence, S. C.

Many children of today are suffering from malnutrition and anemia resulting from an inadequate intake of foods containing iron and vitamins, the doctors wrote in the January 5 Journal of the American Medical Association.

The doctors based their conclusions on a study of 50 children brought to their office suffering from malnutrition and anemia. The children, 25 boys and 25 girls, ranged in age from 13 to 42 months. They were pale, undernourished, listless, tired, irritable, and subsisted mostly on milk.

According to the doctors, the six major causes for the condition were:

1. Misunderstanding as to the importance of milk in the daily diet. Milk is not a complete food, and many children not only do not need, but cannot take, a quart of milk a day and eat the additional foods required for normal growth and development.

2. Failure to wean the baby from the breast or bottle during the last months of the first year. When the baby is able to handle a bottle, he plays with it and drinks milk continually, dissipating his natural appetite.

3. Failure to teach the child early to feed himself, to hold and drink from a cup, and to handle a spoon. When a child is allowed to feed himself, he appears to enjoy it and the eating of solid foods becomes a pleasure.

4. Failure to continue the administration of supplementary vitamins after the first few months of life.

5. Poor understanding on the part of parents as to what constitutes a satisfactory diet.

6. Lack of periodic medical examinations.

"It is apparent that the problem of malnutrition and anemia in children is not merely one of diagnosis and treatment, but that it is also, and perhaps primarily, one of prevention; and prevention comes through education," the doctors stated.

"What education has done and is doing is well demonstrated by the greatly improved care that the infant receives today as compared with the care given a baby two decades ago. This effort must be continued, but it must be amplified to include the older infant and the young child, if we are to prevent the appearance of malnutrition and anemia in a sizable segment of our small-child population."

Following the eating of properly balanced diets, supplemented by iron and vitamins, and immediate weaning, marked improvement was noted in the children, according to Drs. Price and Hart.

A proper diet consists of fruit juice, an egg, and cereal or toast for breakfast; two vegetables, a starch, and meat or cheese for lunch; and fruit or vegetable, cereal or sandwiches, and a simple dessert for dinner. A glass of milk should be offered at each meal, but nothing between meals.

CORTISONE AND ACTH USED TO TREAT SKIN DISEASES

The successful use of cortisone and ACTH to relieve the symptoms of 13 various skin inflammations and diseases was reported in the Journal of the American Medical Association of January 5, 1952.

The article stressed, however, that the hormone drugs did not cure the afflictions, and should not be used promiscuously, without knowledge of their physiological effects and dosage, and of the influence of infection on those receiving such treatment.

The drugs, according to the report, appeared to buffer or to shield the target tissues from the provoking agent, and, because of this, suppressed many of the serious dis-

abling symptoms of the diseases. They also aided in reducing the itching, which permitted more rapid healing of the lesions.

In addition, many of those persons treated with cortisone and ACTH showed mental stimulation and mental buoyancy, felt full of pep, were much more active and had increased appetites.

Some of the patients, however, were unable to sleep well, appeared anxious and agitated, and experienced slight and transient changes in their mental stability. Cortisone also tended to suppress the symptoms and surface signs of infectious diseases, which prevented the recognition of unexpected infections. Some patients, the report stated, did not obtain any relief from the drugs.

Recurrences of the symptoms of the diseases and inflammations were noted in many cases shortly after administration of the drugs ceased, according to the four Rochester (Minn.) dermatologists who made the report.

"For the majority of patients with dermatosis, the courses of treatment were short, and significant physiological alterations were seldom seen," the doctors stated.

"In all cases an effort should be made to find the minimal maintenance dose that provides suppression and relief of symptoms."

The report was submitted by Drs. Robert R. Kierland, Paul A. O'Leary and Louis A. Brunsting of the Mayo Clinic and Dr. John W. Didcock of the Mayo Foundation, University of Minnesota.

NECK PAIN CAN BE A VERY SERIOUS THING

A pain in the neck—literally speaking—can be a very serious thing.

Many common, every-day afflictions cause severe neck pains, the diagnosis of which may be obvious on short examination or may require meticulous history, careful physical and neurological examination, and certain laboratory tests, according to Drs. James E. Watson, Jr. and Sylvester W. Thorn, of Houston, Texas.

In children, acute neck pain is usually due to an infectious process in the nose or throat, the central nervous system or the lymph

nodes, the doctors wrote in the January 5 Journal of the American Medical Association.

In adults, they said, neck pain is often due to dental or other oral infections, postural and structural changes in the neck, muscular affections and injuries. In the elderly, such pain may be due to cervical arthritis, blood vessel disease or malignant tumors.

Among the diseases which cause such pain are a sore throat, diphtheria, infections of lymph nodes and glands resulting from German measles and mumps, meningitis, meningism and poliomyelitis.

Boils, carbuncles and cysts anywhere on the neck are common causes of neck pains, the doctors stated, as are a thyroid condition, goiter, certain skin inflammations of the neck, inflammations of the mouth and osteomyelitis.

Acute neck pain often may be associated with, or as the presenting symptom of, a virus infection of the respiratory tract, according to the doctors. Tumors, arthritis, tuberculosis of the larynx, syphilis and bursitis are also causes.

Certain types of heart conditions may even cause neck pain, as may various diaphragmatic and abdominal diseases, it was stated.

However, the doctors pointed out, not all neck pain points to a serious affliction. An old-fashioned "crick in the neck" is probably just due to the sudden onset on awakening after sleep, exposure to inclement weather, or just too tight a collar.

SEVERITY OF HEART ATTACK, NOT AGE OF VICTIM, DETERMINES OUTCOME

The higher mortality rate from acute myocardial infarction in older age groups is due to a greater frequency of serious attacks rather than to the age of the victims, it was stated in the December 29 Journal of the American Medical Association. Acute myocardial infarction, a common, serious heart condition, is the degeneration of the heart muscle due to the obstruction of a coronary artery.

Five doctors pointed out that although severe attacks are commoner in older persons, the prognosis of a severe or mild attack appears to be unaltered by age.

"The pessimism commonly revealed in the estimation of prognosis in any elderly patient with this disease is unwarranted if based on age alone," it was stated. "Too often the persistence of such pessimism, even after satisfactory recovery, has condemned the elderly good risk survivor to a nonproductive, boring existence.

"Patients in this category, as well as those in younger groups, may be successfully rehabilitated toward regaining a measure of personal, social, and economic independence consistent with their residual capacity."

The doctors based their conclusions on a study of 1,047 persons suffering from acute myocardial infarction, 843 of whom were men, and 204 women. The age range was 30 to 88 years, with the mean age of the men 56 years, and the women 60 years.

The patients were divided into two groups: good risks and poor risks. The latter group included those persons who had suffered previous myocardial infarction, uncontrollable pain, severe degree or persistence of shock, significant enlargement of the heart, gallop rhythm, congestive heart failure, and other serious complicating diseases.

A total of 331 (53.6 per cent) of the 618 patients under 60 years of age were considered good risks, and 287 (46.4 per cent) poor risks. In comparison, only 158 persons (36.8 per cent) of the 429 persons over 60 years were considered good risks, against 271 (63.2 per cent) considered bad risks.

The mortality rate of those under 60 years considered good risks was 3.0 per cent, compared to 3.2 per cent for those over 60. The death rate of those under 60 considered poor risks was 58.5 per cent, contrasted to 61.6 per cent over 60.

"The analysis presented confirms previous observations which have indicated that the mortality rate from acute myocardial infarction is elevated among persons past middle age," the doctors stated.

"It appears to show, however, that this increase in mortality is mainly the result of a higher incidence of serious attacks among those in the later decades of life."

The report was prepared by Drs. Henry I. Russek, Burton L. Zohman, Alexander A. Doerner, Allen S. Russek and LaVere G. White. Drs. Doerner and White are associ-

ated with the cardiovascular research unit of the department of medicine, U. S. Public Health Service Hospital, Staten Island, N. Y. Dr. Henry I. Russek is also from Staten Island, Dr. Zohman from Brooklyn, and Dr. Allen S. Russek from New York City.

TERRAMYCIN USED TO TREAT TYPHUS, DYSENTERY, AND TYPHOID

Terramycin, one of the newer antibiotics, is believed to be curative in treating epidemic typhus, useful with limitations in acute amebic dysentery and may be effective in some cases of typhoid, according to a report in the *Journal of the American Medical Association* of December 29, 1951.

The report was prepared by Drs. John H. Killough and Gordon B. Magill, of the department of clinical investigations of the U. S. Naval Medical Research Unit No. 3, Cairo, Egypt.

The doctors successfully used terramycin in the treatment of five persons suffering from epidemic typhus, one of whom was considered to be fatally ill. Subjective and objective improvement of all patients was observed within 24 hours after treatment was begun, the doctors reported.

Seven persons suffering from amebic dysentery were given an average of 66 grams of the antibiotic over a 14-day period. Improvement was noted in all patients within eight days, according to the report.

Inflammation of the liver, accompanying the disease, disappeared slowly, however. One of the patients developed an abscess of the liver during treatment, and required the additional use of chloroquine, an antimalarial agent, to effect a cure, it added.

Little scientific information is available concerning basic differences in racial pathology among the white, Indian, Eskimo, and Aleut populations. For example, we have no way of knowing whether the high tuberculosis mortality rate among the latter groups should be attributed simply to a higher degree of racial susceptibility or to a combination of factors, such as exposure to massive doses of tubercle bacilli in crowded living conditions, poor nutrition, recurrent gastroenteric diseases and parasitism. What diseases existed among the Eskimos and Indians prior to the coming of the white man? It would seem that here are but a few of the areas where the public health worker and the anthropologist could cooperate in worth-while research.—*Jack C. Haldeman, M. D., Pub. Health Reports, July 20, 1951.*

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MANAGEMENT OF ANESTHETIC EMERGENCIES

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and

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Since 1937, when the first department in anesthesiology was organized in this institution (then known as Employees' Hospital) by Dr. E. Bryce Robinson, Jr., we have witnessed a marked advance in this specialty in Alabama. Today a patient may face surgery with a far better chance of survival than he did even ten years ago. The magnitude of surgery in our state ranks with that of any state in the Union. Surgery of the lung, surgery of the heart, and major surgery on the aged and poor-risk patients can be undertaken with a much brighter outlook than ever before. Those of us in the field of anesthesiology are justly proud of the contribution we have made. However, we are still fully aware of accidents that occur on the operating table for which anesthesia may be held responsible. Anesthesia has advanced far beyond the alibi stage for such accidents and fatalities that occur during surgery. Telling a family that a patient's heart stopped beating is not a very good excuse.

The prevention of acute emergencies will depend on the knowledge, training, and alertness of the one administering the anesthetic. After all, prevention is far more important than treatment. In the words of John Adriani,¹ the anesthetist to trust is not the one to treat trouble but rather the one who can prevent trouble from occurring. In

¹Read before the Association in annual session, Mobile, April 20, 1951.

From the Department of Anesthesiology, Lloyd Noland Hospital.

1. Adriani, John: Personal communication.

order to prevent these alarming conditions from taking place, one must have a complete knowledge and understanding of the causative factors that may alter the normal physiology of respiration and circulation. How are we to detect a low grade oxygen deficiency in a patient if the clinical picture which presents itself in this disturbance is unfamiliar to us? If we do not understand fully the behavior of these anesthetic agents—and there are many to choose from today, then how are we to recognize their side effects? We must understand and appreciate not only the usefulness of these agents and drugs but also their limitations.

Only through proper training can we acquire such knowledge, a knowledge that is all important in order to treat the causative factors of these emergencies. The most common disturbances that confront us during anesthesia are respiratory and circulatory in nature.

RESPIRATORY DISTURBANCES

Respiratory disturbances may present themselves during any plane and under any type of anesthesia, perhaps more frequently under light anesthesia, yet the effects of respiratory depression from deep anesthesia can be quite serious. Positive factors in the disturbance of normal respiration may be direct mechanical stimulation, or pharmacologic or biochemical changes. Surgical manipulation of the splanchnic nerves or celiac plexus may alter the normal physiology of respiration, producing an apnea that appears suddenly, lasting only a few sec-

onds, and is then followed by a prolonged period of hyperpnea. Also, surgical stimulation of the vagus nerve above the heart or the stimulation of the carotid sinus during an operation on the neck may have a similar effect. Biochemical changes will stimulate the carotid body, hypoxia being the most powerful. Hypoxia may occur and often does without signs of cyanosis, thus making the diagnosis very difficult, unless one is familiar with the clinical picture. When too great an amount of respiratory depressant drugs are given as premedication for an anesthetic agent, such as cyclopropane or sodium pentothal, the medullary respiratory centers are depressed, producing an hypoxia. This hypoxia stimulates respiration by way of the carotid body, sometimes to a degree that the patient might seem to be getting in too light a stage of anesthesia, and if more of the anesthetic agent is given at such a time the result may be quite serious. In such cases, attempts at adequate oxygenization will result in apnea due to removal of the hypoxic stimulus to the carotid body. Atropine or scopolamine tends to cause apnea to be induced sooner and to increase its duration. Asphyxial stimulation is condemned because of its damage to the central nervous system. Assisted or artificial respiration, if necessary, must be maintained until the respiratory centers can take over unaided. Contrary to popular belief, apnea due to diminished alveolar and arterial CO_2 is rarely observed during anesthesia.

Another disturbance in respiration that may confront the anesthetist and the surgeon takes place under a deep ether anesthesia. Under this plane of anesthesia the respiratory excursions take the form of piston-like movements, sometimes described as a diaphragmatic breathing. This type of respiration makes it very difficult for the surgeon who is performing an abdominal operation. The first thought, of course, is to increase the anesthetic agent in order to produce a quieter and smoother respiration. This will further depress not only respiration but also circulation. The result can be fatal.

Apnea *per se* is not an alarming condition if the causative factor is determined and proper treatment instituted immediately. Apnea may occur during any stage of anes-

thesia but most often under light planes. The rapidly acting respiratory depressant drugs, such as sodium pentothal and cyclopropane, are more apt to produce apnea. Regardless of how light the plane of anesthesia may be during a period of apnea, the anesthetic agent in use should be discontinued. One must be absolutely certain that the respiratory tract is an open airway. In a majority of cases apnea is successfully treated by gentle, rhythmical pressure against the oxygen bag. Gentleness cannot be overemphasized. When artificial respiration is being administered, one should remember that the expiratory phase should be twice as long as the inspiratory phase. This will prevent any interference with the venous return of blood to the heart. A very severe circulatory disturbance may be the result if there is interference with this normal flow of blood.

Occasionally a high spinal block will produce an apnea. Here we have a patient that is conscious and, therefore, the psychic element must be treated. The administration of a 2½ per cent solution of sodium pentothal to produce analgesia can overcome this. Artificial respiration must be used until regular respiration is resumed.

Apnea under sodium pentothal can produce death within a very short time, and sometimes it seems quite sudden. This has been thought to be due to a vagal stimulation. Depth of anesthesia under sodium pentothal is completely out of proportion to muscle relaxation in the absence of reflexes. The patient may be under deep sodium pentothal, yet will move or twitch when the incision is made.

In surgery of the chest, apnea may occur during intubation, when the pleura is opened during positive pressure, and when the pleura is closed. Also, manipulation of the hilus will interfere with normal respiration.

One of the most underrated respiratory disturbances that can be of a serious nature is laryngeal spasm. Asphyxia from laryngeal spasm may prove fatal within a very few minutes. During general anesthesia, laryngeal spasm may be caused by direct local stimulus or it may be reflex in nature. In either case, branches of the vagus are involved. Laryngeal spasm usually occurs before the second plane of anesthesia. Some of the most common causes are: mucus, air-

way touching the epiglottis, vomitus, high concentration of ether, intubation, stimulation of the vagus under sodium pentothal, and manipulation of the splanchnic nerves and celiac plexus.

When we are confronted with laryngeal spasm, the causative factor should be removed immediately and treatment instituted. If it occurs during ether induction, decrease the ether. If an airway is pushed deep into the throat, touching the epiglottis, then it should be lifted slightly. The importance and usefulness of atropine in the prevention, as well as the treatment, of laryngeal spasm has been shown many times in experimental work. For immediate effect, atropine (grains 1/100, 1/150) may be given intravenously. Increased pressure on the oxygen bag in an effort to introduce oxygen into the lungs is the important step. Again, gentle but gradual pressure should be applied against the bag. Intubation may be successful during expiration if pressure on the chest wall is applied. If tracheotomy is necessary, Burstein² says it should be done when circulatory collapse presents itself after the compensatory rise in blood pressure. This circulatory collapse may take place within a very few minutes.

Aspiration of stomach content under anesthesia presents a difficult problem. This disturbance usually occurs under a light plane of anesthesia. However, during an abdominal operation where there is direct or indirect pressure on the stomach, regurgitation may take place under deep anesthesia. When regurgitation occurs under deep anesthesia, it may be a silent type of regurgitation. In the past 12 years we have had two fatalities in children resulting from this kind of regurgitation.

Patients admitted for emergency operation make the problem even more difficult. Emergency operations are like labor pains: they usually come on after a full meal. Stomach lavage will remove only a part of this food. How long one should wait before administering an anesthetic after a heavy meal has always been a question. We have seen obstetric patients vomit green vege-

tables, meat, and other things five and six hours after the meal.

If during induction the patient reveals a willingness to vomit, the anesthetic agent should be discontinued and the patient allowed to empty the stomach. This method we recommend, as it occurs at a stage of anesthesia when patients still have control over their reflexes. However, one should be prepared at all times to use aspiration, lower the head of the patient, and, if necessary, use catheter suction in the trachea. Insertion of a Levine tube at the time of surgery, certainly upper abdominal or intestinal surgery, should be standard procedure.

CIRCULATORY DISTURBANCES

There are several forms of circulatory disturbances that may take place under anesthesia: such conditions as tachycardia, bradycardia, cardiac arrhythmias, shock, and cardiac arrest. Our discussion will deal with the last three, namely, cardiac arrhythmias, shock and cardiac arrest.

The frequency of cardiac arrhythmias under general anesthesia is considered very high. Kurtz, Bennett and Shapiro,³ in a study of electrocardiographic tracings of 109 patients during surgical operations, were able to detect arrhythmias in a high percentage of these patients. Of the 20 cases under ether, 18 cases developed arrhythmias; of the 41 cases under cyclopropane, 33 developed cardiac irregularities; eight of the 10 cases under nitrous oxide developed arrhythmias.

Sensitization of the heart muscle and stimulation of the vagus are considered the causative factors. Sodium pentothal, which was not included in their studies, produces stimulation of the vagus. Oxygen deficiency under anesthesia is considered one of the common causes of arrhythmia. These cardiac disturbances occur more commonly during induction of anesthesia, intubation, during any heart and lung surgery, and often during the manipulation in the region of the celiac plexus.

Treatment depends on knowledge of the causative factor. A great number of patients developing irregularity can be treated suc-

2. Burstein, Charles L.: *Fundamental Consideration in Anesthesia*, The Macmillan Company, New York.

3. Kurtz, C. M.; Bennett, J. H., and Shapiro, H. H.: *Electrocardiographic Studies During Surgical Anesthesia*, J. A. M. A. 106: 434, 1936.

cessfully with oxygen. This is best accomplished by using slight pressure on the oxygen bag during the normal inspiratory phase. When arrhythmia occurs, it is wise to discontinue the anesthetic agent that is being used. In the case of cyclopropane, arrhythmia usually disappears shortly after this agent has been discontinued.

Irregularity of the pulse often occurs following the use of a vasopressor drug that has produced intense effect on the blood pressure. Adrenalin has such undesired qualities. However, no treatment is usually necessary in these cases, as in a short time the pressure will decline to normal and the pulse will again be regular.

The drugs used in the treatment of arrhythmias consist of quinidine, procaine, and Pronestyl. Any one of these drugs may be used prophylactically before surgery or at the time of surgery. We have used successfully at the time of arrhythmias 200 to 500 mg. of Pronestyl intravenously, and 5 to 10 cc. of 1 per cent procaine administered intravenously. Topical procaine may be used on the heart during chest operations or used as a continuous drip, using 1 gm. in 1,000 cc. of glucose.

Cardiac arrest has gained a tremendous popularity during the past few years. However, the first cardiac arrest was reported as far back as 1848. The first case of cardiac arrest treated by subdiaphragmatic massage was reported by Starling and Lane in 1902. Lahey and Ruzicka⁴ reported 15 cases. Seven of their 15 cases of cardiac arrest survived by cardiac massage.

Many of these cases could be saved today if our operating team would become conscious of this condition. Early diagnosis is vitally important. Weinberger et al.⁵ have demonstrated experimentally that treatment must begin within 3½ minutes of cessation of circulation. Beyond this period permanent cerebral damage may occur. Cardiac arrest may take place during any stage of anesthesia, under any type of an anesthetic agent, and during any stage of

surgery. We recall cases in our hands during the past 12 years that occurred under spinal, ether, cyclopropane, and sodium pentothal. The anesthesiologist is in the key spot for early diagnosis of cardiac arrest. When the diagnosis has been made, immediate treatment should be carried out. Artificial respiration with 100 per cent oxygen should be started at once, and an intratracheal tube should be inserted. The approach to the heart depends on the operative site when this condition has been established. We recall one case of cardiac arrest which occurred during a heart operation. Of course, the diagnosis in this case was made early and treatment instituted immediately. The visualization of the heart at the time of the cardiac arrest made this diagnosis possible. At the Lahey Clinic, when a diagnosis of cardiac arrest has been made, the first step in the treatment is to insert a needle in the heart and watch for any pulsation of the needle. If there is feeble pulsation, usually the stimulation of the heart muscle by the needle alone, plus the artificial respiration, will bring the heart back to its normal beat. However, if the needle does not pulsate, a solution containing ½ cc. of 1 to 1,000 epinephrine and 9½ cc. of 1 per cent procaine is injected. The heart is entered from the 4th interspace, anteriorly. Before injection of this solution, however, blood should be aspirated to make certain that the needle is in the heart. After the injection of the solution, the needle should be left in place to observe for any pulsation. If the solution is not available as soon as the diagnosis is made, then one should discard the use of this treatment and immediately prepare for cardiac massage. The approach to the heart may be: (1) transperitoneal, subdiaphragmatic; (2) transperitoneal, transdiaphragmatic; or (3) transthoracic. The rate of cardiac massage has come up for discussion on several occasions. Gunn⁶ recommends that the compression of the heart be gradual and relaxation abrupt. The rate should be half the normal rate of the heart. That is the technique most men follow today. Overstimulation should be guarded against.

Shock: One merely has to reach for any of our every-day textbooks to get the defini-

4. Lahey, Frank H., and Ruzicka, Edwin R.: *Surg., Gynec. & Obst.* 90: 108-118, Jan. 1950.

5. Weinberger, L. M.; Gibbon, M. H., and Gibbon, J. H., Jr.: *Arch. Neurol. & Psychiat.* 43: 615-634, 1940.

6. Gunn, J. A.: *Brit. M. J.* 1: 9, 1921.

tion of shock. There are many variations in words of this definition, yet the physiologic condition produced remains the same. The simplest definition of shock that we like to think of is: a syndrome resulting from a reduction of effective circulating blood volume with a progressive circulatory failure.

The importance of early recognition and treatment of shock cannot be overstressed. For instance, to obtain the best result in hemorrhage, blood must be replaced at the most favorable time. The most favorable time is, of course, as it is being lost. Restoration of blood volume should be maintained during surgery in order to prevent a state of irreversible circulatory failure. One should never wait for the typical signs of the pale, cold, and clammy skin, with a weak and thready pulse, before making a diagnosis of shock. This is particularly important in the aged and poor-risk patients, for these individuals do not tolerate the insults of over-replacement or under-replacement of blood. The normal physiology should be maintained at all times.

In order to replace blood loss at the time of operation, one should have blood available. The safety of our laboratory procedures and the willingness of donors to give blood make this possible, yet it remains the task of the surgeon to have this blood ready for use at the time of operation. Of course, as we all know, in some cases it may be necessary to administer blood before surgery. The amount of blood to have available and the amount to administer depends on the type of operation and the degree of hemorrhage. It has been estimated by Bonica and Lyter⁷ that in a subtotal gastric resection, the loss of blood is 632 cc.; in a common duct operation, 368 cc.; radical mastectomy, 688 cc.; hysterectomy, 419 cc.; vaginal repair with vaginal hysterectomy, 464 cc.; lobectomy, 1,401 cc.; and pneumonectomy, 1,214 cc. So we can see that without the replacement of this known amount of blood to be lost, one is certainly inviting trouble. We consider it advisable to start fluid on all patients undergoing surgery, certainly of the major type, either before administration of the anesthetic or immediately after. In practically all of our cases an 18 gauge needle is used.

During chest operations we recommend a 15 gauge needle. Occasionally we find it necessary to replace blood loss in a very short period. A 15 gauge needle is essential for such emergencies. A needle smaller than 18 gauge will sometimes present difficulties when blood is to be administered. The veins of choice are those of the cubital regions or those of the wrists. In very acute emergencies these veins are difficult to find due to circulatory collapse, and we resort to femoral or jugular veins. We feel certain that in several cases we have prevented irreversible damage to various tissues of the body by using the femoral or jugular for transfusions. They are not difficult to cannulate.

The circulatory depression during spinal anesthesia is considered to be due to a vasomotor reaction. Much has been written about the causative factors producing hypotension under spinal anesthesia. Most writers, however, agree that this hypotension is due to a decrease in peripheral resistance by blocking out the vasoconstrictors. There is evidence in some cases of a decrease in cardiac output under spinal anesthesia. The degree of hypotension that may result after spinal depends on the level of the anesthesia. There is a marked differentiation between a low spinal and a high spinal. It is the high spinal that produces the marked disturbance in the circulatory mechanism. It is well to remember that patients under high spinal do not tolerate the loss of blood, surgical trauma, and radical change in position. A patient that is suddenly moved from supine to prone position or into kidney position may experience a marked drop in blood pressure. The use of abdominal packs, marked Trendelenburg position, and kidney or gallbladder bars will interfere not only with the circulation but also with respiration. In a high level spinal the intercostal muscle paralysis will produce a decrease in the vital capacity. Controlling the blood pressure of a patient under spinal will depend on the physical condition and the age of that patient. Hypertensive patients under spinal anesthesia are more difficult to control. Perhaps this is due to the very sensitive circulatory system. The early drop in blood pressure is usually successfully treated with glucose, oxygen, Trendelenburg position, and vasopressor drugs.

7. Bonica, J. J., and Lyter, C. S.: *Anesthesiology*, January 1951.

The vasopressor drugs play an important role in the treatment of hypotension under spinal. It has been conclusively shown that vasopressor drugs will minimize the hypotension that is often associated with spinal anesthesia, and it has become routine in most places to administer one of these drugs prophylactically, preceding the administration of the spinal anesthetic. There are a great many vasopressor drugs available that are used for this purpose and several are considered very satisfactory. During the past 15 years at this Hospital we have had occasion to use seven different drugs for this purpose.

Recently we have selected data on these drugs and analyzed them to compare their efficiency for use prophylactically prior to spinal anesthesia. Epinephrine in a dosage of 1 cc. of a 1 to 2,600 solution was the first drug used for this purpose. As we know now, the short intense action that is exerted by epinephrine makes it unsatisfactory for use in this manner. Neosynephrine 4 mg. was the second drug used for this purpose. Its action is also intense and short in duration, producing an effect similar to epinephrine although by a different mechanism. It is likewise unsatisfactory for use in this manner. Ephedrine 50 mg. was used for several years and is considered to be very satisfactory for use as a prophylactic vasopressor drug to maintain the pressure during spinal anesthesia. There is a certain amount of cerebral stimulation produced by ephedrine that we do not consider desirable when used with spinal anesthesia but this is usually not a problem because of the preoperative sedation.

Methedrine (desoxyephedrine) has been used in this Hospital since 1946, and we have found it to be slightly more efficient in maintaining pressure than ephedrine. Other investigators have usually reported significantly increased efficiency when compared to ephedrine. Methedrine, however, is a very marked cerebral stimulant, and produces the feeling of well-being and talkativeness in patients that is often very annoying during spinal anesthesia, and sometimes it is even necessary to give a patient pentothal for this reason alone. Occasionally a tachycardia is produced by Methedrine of from 100 to 120.

Vasoxyl (methoxamine) is a recently introduced drug which exerts a very potent and prolonged vasopressor action. We have been using Vasoxyl for about one year and are very pleased with its efficiency. There is apparently no cerebral stimulation by Vasoxyl, which, with its very efficient vasopressor action, makes it desirable for use during spinal anesthesia. Vasoxyl, however, has one side effect which is sometimes considered undesirable. A bradycardia is produced that is usually ascribed to the carotid sinus reflex caused by increase in blood pressure. However, in some cases the bradycardia is very marked without an increase in blood pressure. We are not sure of the exact mechanism of this side effect. This bradycardia has always been effectively abolished by administration of atropine, usually intravenously. In our studies we have found that ephedrine, Methedrine, and Vasoxyl are satisfactory for use to maintain blood pressure during spinal anesthesia. Vasoxyl and Methedrine are approximately equal in efficiency, ephedrine being slightly inferior, but satisfactory. Thus we feel that the mechanism of the vasopressor action and side effects produced should be considered when selecting the agent for this use. In most cases during spinal anesthesia primary circulatory derangement associated with hypotension is considered to be arteriolar dilatation causing a decreased peripheral resistance to the vascular system. The action of Vasoxyl is peripheral, the drug having apparently no direct action on the heart. Thus, if this be the predominant mechanism of the hypotension of spinal anesthesia, Vasoxyl should be the most physiological drug to use in order to counteract this deranged physiology. The lack of cerebral stimulation is also desirable when used for this purpose. Bradycardia is the only side effect that may be undesirable that we have encountered. Methedrine has been found to exert its action primarily by increased total peripheral resistance, which we feel is the most desirable mechanism of action. However, the marked central stimulation and the talkativeness make it somewhat more undesirable for use with spinal anesthesia. We consider Methedrine very efficient and always satisfactory for this purpose. Ephedrine exerts its action primarily by increased cardiac output, and action directly

on the heart. In a small percentage of patients the primary circulatory derangement that produces the hypotension associated with spinal anesthesia is a decrease in cardiac output, which is secondary to postarteriolar stagnation. When this condition exists, ephedrine is the more physiological approach in treatment; however, the average anesthesiologist is not able to determine which mechanism is predominant at any one time. Since arteriolar dilatation is apparently the major effect produced in most cases, we feel that a drug which exerts its action primarily by increasing the peripheral resistance is the most physiological approach. It is probably true that in most patients both mechanisms which we have mentioned exist; however, one is usually the predominating factor. Patients vary in their reactions to a given stimulus under different clinical conditions; in fact, the action of the drug itself may vary when given under different clinical conditions.

Neosynephrine is a powerful vasoconstrictor, apparently having little or no direct effect on the heart. We do not use Neosynephrine for the prophylactic maintenance of blood pressure during spinal anesthesia. However, we feel that it is a very valuable drug for use with spinal anesthesia to maintain the blood pressure when given in a continuous intravenous administration. The usual dosage is 1 cc. of a 1 per cent solution in 1,000 cc. of fluid. This method is very efficient and dependable. It is particularly useful in cases of a very high spinal block where the entire sympathetic outflow is abolished and in surgical interruption of the sympathetic outflow. Norepinephrine apparently has an action almost identical with that of Neosynephrine and is used in the same manner in a dosage of 1 cc. of a 1 to 1,000 solution in 1,000 cc. of fluid. Some investigators recommend the use of 4 cc. per 1,000 cc. of fluid, but we prefer the former concentration. Norepinephrine is never given intramuscularly. Its action is very intense and very short, and apparently there is no tachyphylactic effect produced, enabling its administration to be continued over relatively long periods of time with no decrease in efficiency.

In conclusion, we would like to say that in any disturbance of respiration or circula-

tion we always determine the etiology if at all possible. We do not advocate a routine in treatment but stress correction of the abnormal physiology. Adequate respiratory exchange must be maintained, and liberal use of oxygen with an open airway and artificial respiration if necessary. Cardiac status must be determined and an adequate blood volume maintained. One must always be cautious that vasopressors or other drugs are not used as a substitute for adequate replacement of blood, and in all cases of resuscitation the physiologic approach to the problem is the most desirable.

Skin Cancer—The diagnosis of cancer of the skin is made or suspected by the gross appearance of the lesion. The irregular outline, everted edge, the firm consistency, and the fixed base of a skin cancer, all serve to mark its identity at a very early stage. Biopsy from the clean borders of the lesion or excision of the entire tumor, with microscopic examination of the excised tissue, is mandatory in any chronic skin lesion.

There is a difference of opinion regarding the most favorable method of treating carcinoma of the skin. The application of escharotics, electrocoagulation, excision, and radiotherapy all have their advocates. These are all acceptable, providing that the tumor is destroyed completely by the method of treatment chosen. The mode of treatment is of less importance than the skill of the operator in its use. One should bear in mind that the choice of the ideal method can be made only if all forms of treatment are available and if the choice is independent of any vested interest in an x-ray machine, a quantity of radium, or the possession of the requisite skill and courage to undertake major surgery.

When the control of the disease can be accomplished with equal certainty by any of the available methods, preference should be given to the treatment which gives the most satisfactory cosmetic result. The location, amount of extension, and history of previous treatment are important factors in selecting the therapy for the particular tumor being considered.

We have hesitated to recommend roentgenotherapy in the treatment of carcinoma of the eyelids, the skin of the ears and nose, or any region contiguous to cartilaginous or bony structures, because of past experience with painful chondronecrosis. Merritt, however, states that well-filtered radiations applied with convenient protraction eliminate these untoward effects, while assuring the success of this conservative treatment. Regato, who has had extensive experience in treating skin cancers, believes that roentgenotherapy properly given cannot be excelled in treating neoplasms in these locations. He believes, and we agree, that roentgenotherapy is actually contraindicated in the treatment of carcinomas arising from scars.—*Sawyer & Woodburne, Arizona Med., Jan. '52.*

GALACTOSEMIA

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Galactosemia is a rare congenital syndrome characterized by growth failure, galactosuria, albuminuria, hepatomegaly, an abnormal galactose tolerance curve, usually zonular cataracts, anemia and splenomegaly. Fourteen cases have been recorded in the literature. Other probable cases have appeared. This paper reports another and briefly summarizes and discusses facts about the fifteen cases. The first was described by Von Reuss from Germany in 1908 and the second by Goppert in 1917. The other twelve have been reported in the literature of North America.

Ordinarily the normal liver converts galactose to glycogen but in certain rare cases this fails to occur, at least to a great degree, and a high concentration of galactose circulates in the blood stream. The fact that individuals manifesting this syndrome metabolize galactose less well than non-affected ones is easily demonstrated but the cause of this faulty metabolism has not been elucidated. A genetic background is suggested by the occurrence of several presumptive cases in siblings.

REPORT OF A CASE

J. M., age 28 months, was first seen by me August 24, 1949. He was said to have been as well as usual until the day before when he developed coryza with some fever, vomited twice, and was seen by a physician who gave an injection of penicillin. He also fell from the bed on that day and struck his head without apparent harm. During the night he became stuporous and had several generalized convulsions.

Past history revealed that he was born April 30, 1947, weighing 3.7 kg. and apparently normal. His mother's gestation, labor and delivery were not remarkable. Progress was satisfactory until he was about 3 weeks of age, when he began vomiting. He was admitted to a local hospital at one month of age and remained 6 days. He was readmitted at 6 weeks of age and remained 1 month. His third admission to the hospital was at 3 months of age when he remained 2 days. The hospital records of these admissions were found to contain little informa-

tion. The only laboratory work was a blood count at the second admission and another at the third. The first count June 18, 1947 showed 9 gm. of hemoglobin, 2,300,000 red cells and 8,900 white cells with 42% segmented neutrophils and 58% lymphocytes. Information gleaned from the temperature charts, order sheets and nurses' notes indicated that these admissions were made because of fever, dehydration and difficult feeding. At first admission the temperature was 38.4° C. and the weight on the fourth day afterward was 3.7 kg. While in the hospital the baby was drowsy much of the time and vomited frequently. The stools were apparently normal except for mild constipation. Several hypodermoclyses of 5% glucose in saline were given and the baby was offered a proprietary formula (SMA) along with sulfadiazine and belladonna by mouth. He was thought to be slightly improved on discharge. At the second admission the temperature was 39.8° C. and the weight on the day afterward was 3.4 kg. Mild diarrhea was present on admission but constipation soon developed. Feedings were taken reluctantly and there was considerable difficulty with abdominal distention. On the day after admission a 40 cc. transfusion of citrated blood was given, and several clyses of 5% glucose in saline were administered during the patient's sojourn in the hospital. Rice water, buttermilk, Amigen, skimmed lactic acid milk, banana and Pablum were offered at various times. He was also given injections of crude liver extract and iron by mouth. He was considered slightly improved at discharge. When the baby was readmitted at 3 months of age he weighed 2.4 kg. and the temperature was 40° C. Clyses of 5% glucose in saline were given, and synthetic milk (Nutramigen) was offered as a formula. The weight at discharge was 3.2 kg. The parents stated that after leaving the hospital the baby was offered many different formulae with no particular success and that he weighed 2.7 kg. at one year of age. They said they were never given an opinion as to the cause of his difficulty except that there was "something

wrong with his stomach and he had a big liver." He never seemed to care for milk, but had taken some almost every day of his life. For the past several months he had been offered cow's milk. He ate solid food reasonably well, and during the past 6 months had seemed improved. Little or no amount of vitamins had been offered. Upon detailed questioning, the mother stated that when he was 4 days old the sclerae were jaundiced and when he was admitted to the hospital at 1 month of age he was "yellow all over." He sat alone at 2 years. His first tooth appeared some time after the first year. He never pulled to his feet and had not spoken more than 1 or 2 words. He seemed to be drowsy and slept a great part of the first 18 months of his life. He was somewhat constipated most of the time. During the second year he was immunized against diphtheria, pertussis and tetanus.

Family History: The father and mother were young and apparently well. There were no other siblings and the mother had had no other known pregnancy. No familial diseases were admitted.

Physical Examination: When first seen by me the baby was having a generalized convulsion. The temperature was 39.1° C.; pulse 100 per minute; respiration 45 per minute; weight 8 kg.; height 71.2 cm.; circumference of the head 48.7 cm. The skin was warm and dry, as were the mucous membranes of the tongue and cheeks. The posterior pharynx contained a thick, sticky, mucoid secretion. Breath sounds were rough throughout the lung fields. The liver was palpated 5 centimeters below the right costal margin. The spleen was not felt. The abdomen was somewhat protuberant. Genitalia were normal for age. Extremities were emaciated and showed lack of subcutaneous fat. Mild nuchal rigidity was present. The anterior fontanel was open 2 centimeters in breadth, the pupils reacted to light, and bilateral cataracts were present (confirmed by Dr. Grady Wallace). Chest x-ray, spinal fluid examination, and urinalysis revealed no abnormal finding. The blood count showed 10 gm. hemoglobin, 3,410,000 red cells, and 15,400 white cells, with 42% segmented neutrophils, 50% small lymphocytes, 4% monocytes and 2% basophils.

The baby was admitted to a local hospital

in critical condition. Respirations were stertorous and there was moderate cyanosis. He was placed in an oxygen box and a hypodermoclysis of equal parts of 5% glucose in water and normal saline was started. He was also given penicillin and streptomycin intramuscularly. Aspirin was given rectally for fever, and sodium phenobarbital by injection for convulsions which continued intermittently during the first 12 hours. His condition appeared critical for 24 hours, after which he rapidly improved. During the second day he took water freely and was started on a synthetic formula (Nutramigen). On the third day he laughed and played, sat up in bed and was discharged from the hospital. His parents were instructed to continue Nutramigen. When they returned 6 days later the baby weighed 8.5 kg. and seemed to be in reasonably good condition except that he appeared about the size of a small 1 year old infant. He was somewhat emaciated, had a pot belly, and appeared weak. He was said to have been eating well. The liver was still enlarged. Because of the history of extreme feeding difficulty with hepatomegaly most of his life and because of the marked growth retardation and the eye findings, it was felt that this infant probably had congenital galactosemia. The urine at this time contained a one plus albumen. Fasting blood glucose was 70 mg.% and the NPN 20.5 mg.%. The serum cholesterol was 250 mg.%, calcium 12.5 mg.%, chlorides 570 mg.% and protein 5.6 gm.%. The Wassermann was negative. Mantoux 1:1000 and histoplasmin skin test 1:1000 were negative at 48 hours. X-ray of the skull was not remarkable except that no definite pituitary fossa was visible. The wrist showed 3 carpal centers and the radial epiphysis was barely evident. Bones of the forearm and hand appeared to be normally calcified. Gastrointestinal x-rays showed normal outlines of the stomach and normal progression of barium throughout the intestinal tract. A stool examination was negative for ova and parasites.

September 23, 1949, 27 days following discharge from the hospital, the patient weighed 9.8 kg. and his height was 73.7 cm. He was said to be eating well and to have been avoiding milk. He took 12 to 14 ounces

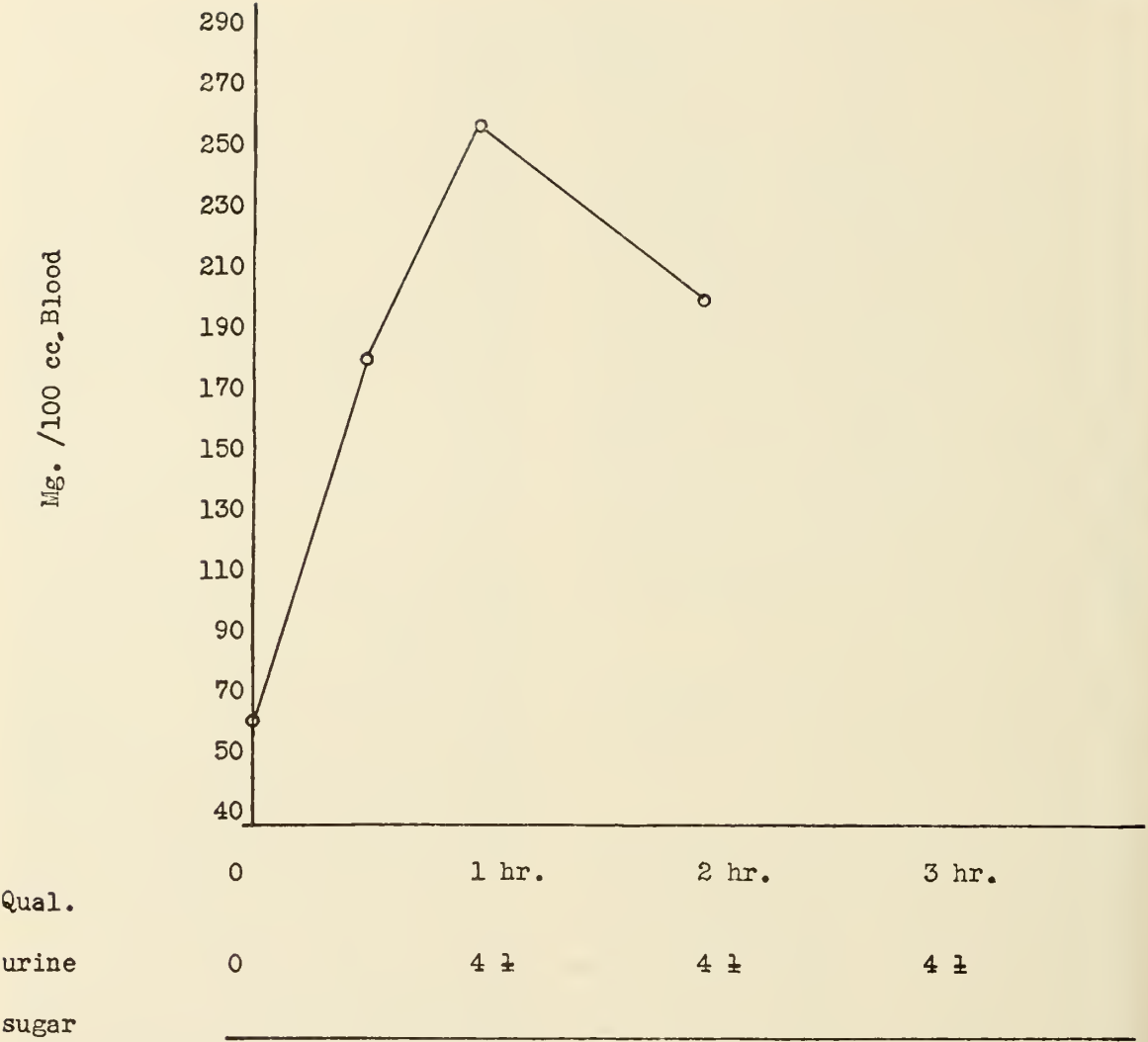


Chart 1. Curve for total blood sugar after 1.75 gm. galactose /kg. body wt. (orally) with corresponding qualitative urine sugar (9/23/49).

of Nutramigen daily. The bowels were regular and the patient seemed well and happy. The fontanel was still open 2 centimeters and the hair seemed slightly coarse. Twelve teeth were present and the baby said 4 to 6 words. He sat alone but did not pull to his feet. The liver was palpable but seemed approximately normal in size. At this time glucose and galactose tolerance tests were performed. Following a fast of approximately 15 hours, the baby was given by gavage 16 gm. of galactose dissolved in water (1.75 gm. per kg. body wt.). Total blood sugar was determined with the patient fasting, and at 30, 60 and 120 minutes after ingestion of galactose. The bladder was catheterized and urine obtained 1 hour and 2 hours after in-

gestion. As will be seen in chart 1 the total fasting blood sugar was 59 mg.%. In 30 minutes it was 177 mg.%, in 1 hour 252 mg.% and in 2 hours 200 mg.%. Both urine specimens contained 4 plus sugar from which characteristic mucic acid crystals were obtained. On the day following the galactose tolerance test and after a second 15 hour fast, a glucose tolerance test was done. Chart 2 shows results. Fasting blood sugar was 73 mg.% and that at 1 and 2 hours was 82 mg.% and 102 mg.% respectively. Urine obtained with the patient fasting, as well as that obtained 1 and 2 hours after administration of glucose, was free of reducing substance. No albumen was found in any of the urine specimens at any time while the pa-

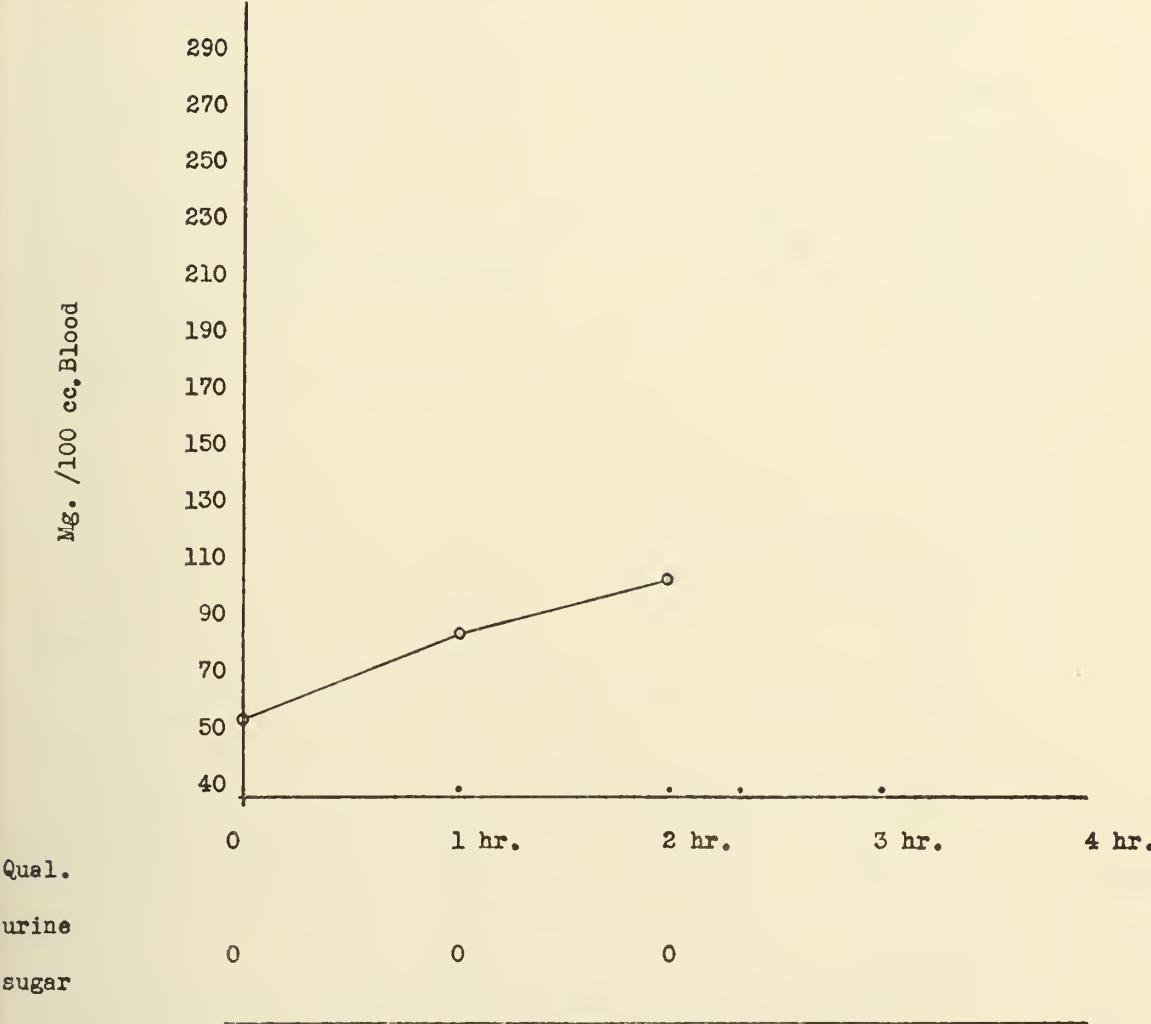


Chart 2. Curve for total blood sugar after 1.75 gm. dextrose /kg. body wt. (orally) with corresponding qualitative urine sugar (9/24/49).

tient was being observed (except in the one recorded above obtained 9/2/49). The parents were instructed to continue Nutramigen with general diet and to avoid milk in all forms. A poly-vitamin preparation (Vi-Daylin) was started.

October 1, 1949, the patient was again seen with the story of sudden onset of fever in the morning, followed by a generalized convulsion several minutes in duration. Examination showed no change except mild abdominal distention. A trace of sugar was in the urine. Hemoglobin was 10 gm. and the total white blood count 29,700, with 82% segmented neutrophils, 14% band forms and 4% small lymphocytes. Blood sugar was 68 mg. and calcium 11.8 mg.%. After being observed several hours the baby was given an

injection of penicillin in oil and discharged with temperature 38.2° C. The following day he seemed as well as usual.

October 31, 1949, examination revealed an apparently healthy child 74.3 cm. tall and weighing 11.1 kg. The fontanel was almost closed, the liver normal in size and two new teeth were present (making a total of fourteen). He was pulling to his feet and speaking about twelve words. At this time the galactose tolerance test was repeated. Chart 3 shows the results. The total fasting sugar level was 57 mg.%. At 1, 2, 3 and 4 hours after galactose ingestion the levels were 274 mg., 210 mg., 210 mg. and 167 mg. respectively. A catheter was placed into the bladder before the tolerance test was started and allowed to remain until its completion. The

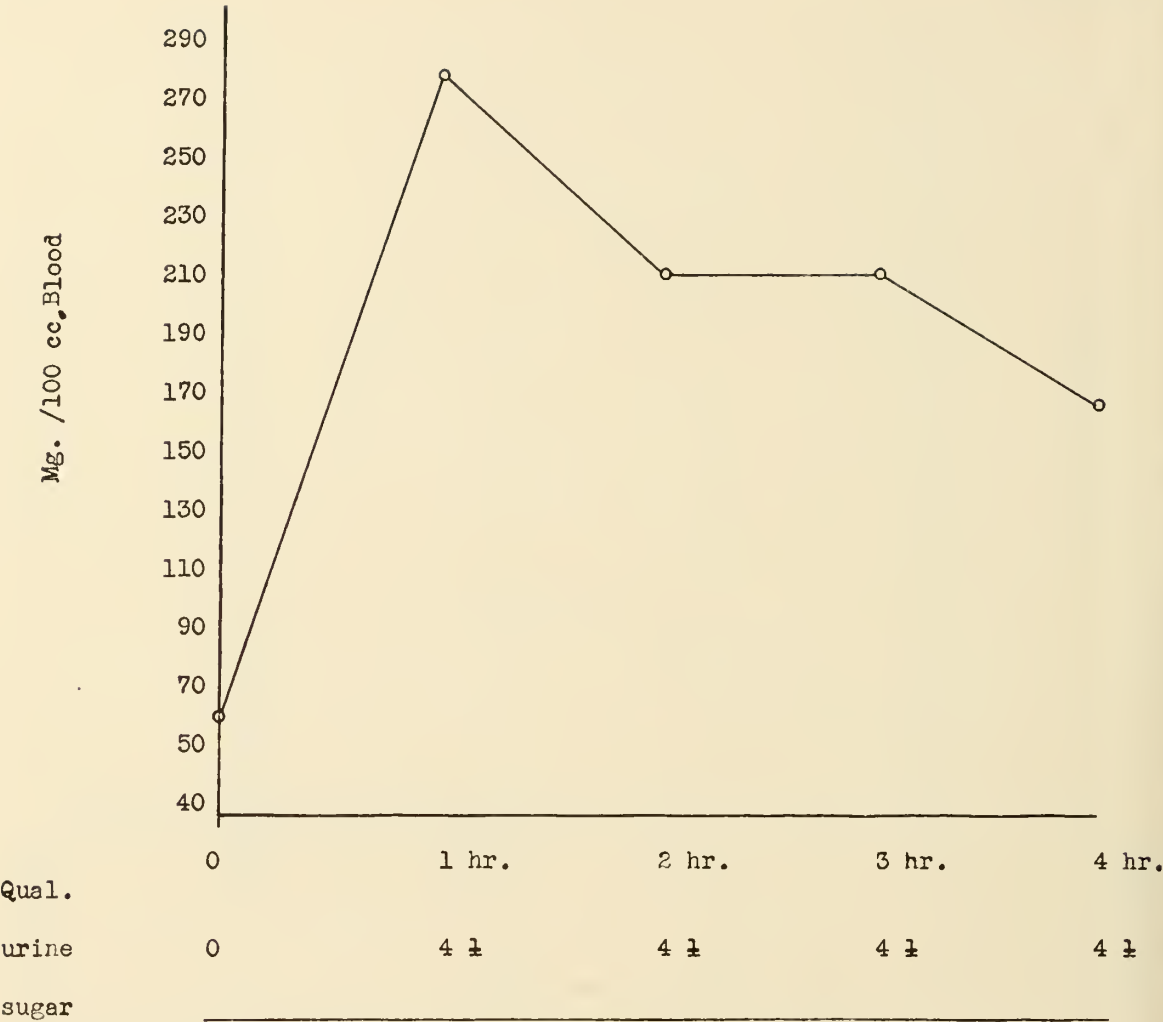


Chart 3. Curve for total blood sugar after 1.75 gm. galactose /kg. body wt. (orally) with corresponding qualitative urine sugar (10/31/49).

urine was collected throughout the four-hour period. Fasting urine contained no sugar or albumin. Total sugar excreted throughout the four-hour test period was 3.32 gm. This amount in itself is abnormally great and takes no account of the small quantity inadvertently lost around the catheter. The urine was still running 4 plus sugar when the period ended.

February 23, 1950, at 34 months of age, J. M. weighed 13.2 kg. and was 81.2 cm. tall, walked alone and had 20 teeth. The liver was not enlarged and the child's general condition seemed good. Intelligence appeared normal and, although bilateral cataracts were still present and apparently unchanged, vision did not appear particularly impaired.

January 6, 1951, at 44 months of age, J.

M. weighed 15.3 kg., was 88.7 cm. tall, and appeared normal except for progression of cataracts (confirmed by Dr. Alston Callahan).

DISCUSSION

The patient herein reported exemplifies the typical galactemic or galactose diabetic patient. He responded satisfactorily to dietary treatment; namely, elimination of milk with provision of a suitable substitute and a balanced menu with added vitamins. In the 17 months after treatment began he gained 7.3 kg. in weight and 17.4 cm. in height, learned to pull to his feet and walk alone, acquired 8 teeth and several words, lost his hepatomegaly and seemed well and happy. His cataracts progressed in spite of elimination of milk from the diet.

Table 1 summarizes the information about the fifteen cases appearing in the literature. As will be observed the eldest patient was 29 months and the youngest 5 days of age when the diagnosis was made. Twelve of the fifteen were males. Eight of the nine case reports mentioning race describe white infants. One was colored. All fifteen manifested growth failure, hepatomegaly, galactosuria and albuminuria. Two infants did not have galactose tolerance curves done. The other thirteen showed grossly abnormal

curves. Eight had some degree of anemia and ten had notable jaundice at one time or another. Ten had bilateral cataracts. Nine of the fifteen had splenomegaly at the time of diagnosis. With the exception of cataracts all patients were relieved of signs and symptoms when milk was eliminated from the diet. One patient (R. C.) developed cataracts while under observation on a milk-free diet. In two cases the eyes cleared spontaneously. In two surgery was employed. The other six still had cataracts at last report.

Reporter	Patient	Age	Sex	Race	Growth failure	Hepatomegaly	Galactosuria	Albuminuria	Ab. galactose tol. curve	Anemia	Jaundice	Splenomegaly	Cataracts	Symptoms cleared after milk eliminated	Cataracts cleared
Von Reuss		8 mo.			+	+	+	+				+		+	
Goppert		29 mo.	M		+	+	+	+	+		+			+	
Mason and Turner	T.B.	6 mo.	M	C	+	+	+	+	+	+		+	+	+	Surg.
Norman and Fashena	R.C.	11 wks.	M	W	+	+	+	+	+	+		—	+	+	?
Mellinkoff et al.	J.J.	2 mo.	M	W	+	+	+	+		+	+	—		+	
Bruck and Rapoport	J.D.	7 wks.	M	W	+	+	+	+	+	+	+	+	+	+	+
Goldbloom and Brickman	G.D.	6 mo.	M		+	+	+	+	+	—	+	+	+	+	Surg.
	M.D.	3½ mo.	F		+	+	+	+	+	+			+	+	?
Ennis and Goldstein	W.J.	2½ mo.	M	W	+	+	+	+	+	+	+		+	+	+
Greenman and Rathbun	J.S.	18 wks.	M	W	+	+	+	+	+	+	+	+	+	+	?
Bell et al.	A.L.	5 da.	M	W	+	+	+	+	+	—	+	+	—	+	
Donnell and Lann	B.P.	3½ mo.	F		+	+	+	+	+	—	+	+	+	+	?
	T.A.	13 mo.	M		+	+	+	+	+	—	+	+	+	+	?
DuShane and Hartman		4½ mo.	M	W	+	+	+	+	+	—	—	—	—	+	
Pitt	J.M.	28 mo.	M	W	+	+	+	+	+	+	+	—	+	+	—

Table 1. A summary of facts about the fifteen reported cases of galactosemia

Although the basic metabolic defect has not been delineated, the signs and symptoms of galactosemic patients may possibly be explained as follows: Excessive galactosemia produces marked depression of blood glucose and growth failure from glucose starvation. Storage of much glycogen, or possibly galactose or fat, in the liver produces hepatomegaly. The renal threshold for galactose being low, this sugar is readily excreted into the urine when any appreciable amount circulates in the blood stream. Associated albuminuria has not been adequately explained although it has been suggested that the mechanism may be the same as that of the albuminuria occurring in uncontrolled diabetes mellitus. Mitchell and

Dodge demonstrated that excessive galactose in the diets of rats regularly produces cataracts, which information may shed some light upon the occurrence of cataracts in the patients under discussion. Anemia is probably due to malnutrition.

Features in which J. M. differed from the other reported cases were minimal albuminuria, convulsive tendency, and absence of demonstrated pituitary fossa. The lack of albuminuria is probably explainable by the fact that he never had any milk after coming under our care. Both episodes of convulsive seizures were attended by fever, which was probably a factor in their etiology. No explanation for apparent absence of the pituitary fossa is offered. Stereoscop-

ic films were not made but five lateral views revealed no fossa outline.

A practical question would seem to be how completely these patients should avoid milk and its products and for how long a time. There is evidence that after total abstinence for a period of time patients tolerate galactose slightly but are not remarkably better. It would seem that the only safe policy is permanent and total abstinence from milk. Small amounts, if they did not produce clinical or laboratory signs, might cause insidious and cumulative damage impairing health or shortening life.

SUMMARY

This paper presents a case of congenital galactosuria (galactose diabetes) and briefly summarizes the information available in the other fourteen case reports appearing in the literature.

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Industrial Dermatitis—Most cases of industrial dermatitis are mild and occur in new workers, and, as mentioned previously, the use of nonirritating protective creams, ointments, and protective clothing will usually be sufficient to keep the worker on the job until the dermatitis has cleared, usually a matter of several weeks. If the dermatitis does not clear under this treatment, the worker should be removed from the job. This should, and usually does, result in recovery. If recovery does not occur after a reasonably long period away from work (six weeks to two months), the cause of the dermatitis must be sought elsewhere than in his occupation.

Workers with extensive severe dermatitis should be removed from their work and treated with wet dressings until the acute symptoms have subsided.

Dressings can be used, as compresses of Burrow's solution 1:20 or saturated solution of boric acid. After the acute symptoms have subsided soothing ointments, such as zinc oxide or boric acid ointment, may be used.

Lotions or ointments containing irritant or stimulating drugs should be used only on chronic cases and only after carefully considering the possibility of irritating an already inflamed skin. There is no reason for the use of sulfonamide drugs or antibiotics, unless the dermatitis is complicated by bacterial infection. Minor eruptions may be converted into serious ones by such treatment. Analgesic agents, such as phenols, benzocaine, and menthol, should be used with caution for they are well known sensitizers. Itching may be relieved by use of warm baths containing bran, oatmeal, or cornstarch. The antihistamines have not given the expected results in allaying pruritis in industrial dermatoses, but when other measures have failed, they may be safely used.

The prevention of industrial dermatitis has received a great deal of justifiable attention and has reduced the incidence of occurrence greatly. Numerous preventive methods are employed; however, the best measures are those that prevent contact of potential irritants with the skin. These are industrial hygiene engineering control measures, such as totally enclosed processes, ventilation of work rooms, and special exhaust vents to carry away irritating gases, vapors, and dusts.

Cleanliness is the most effective personal protection. This includes cleanliness of the skin, clothing, and environment. Enough showers should be available, so that the workers may shower and change to street clothing after each shift. Mild nonalkaline cleansing agents without abrasive scrubbers are recommended.—Hansen et al., *New Orleans M. & S. J.*, January '52.

THE EFFICACY OF VARIOUS SOLUTIONS USED IN THE INJECTION TREATMENT OF INTERNAL HEMORRHOIDS

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For many years, the injection treatment for internal hemorrhoids has been a highly controversial subject. Out of the confusion of conflicting claims, however, there have emerged certain principles which are becoming increasingly accepted in establishing a place for sclerotherapy in the management of this condition.

Gabriel¹ has stated that injection treatment has two objects: 1. to stop bleeding by obliteration of vascular spaces, and 2. to fix mucous membrane by producing a submucous sclerosis. The weight of evidence seems to indicate that the first objective is much more readily attainable than the second. Accordingly, it is felt that any considerable degree of prolapse of the pile mass interdicts the possibility of cure by injections. Thus we must conclude that the possibilities of cure by sclerotherapy are infinitely greater in those cases characterized by bleeding without prolapse. Carrying this hypothesis further, extensive prolapse is to be regarded as a contraindication to sclerotherapy. Additional contraindications are thrombosis and concurrent anal conditions involving infection, fissure, malignant disease, and certain other states.

The advantages of injection treatment are well known to the patient as well as to the physician. The minimal pain, minimal loss of time from work, minimal risk and minimal expense are all strong factors in support of the popularity of this procedure. Admittedly, however, recurrence is much more likely, even in selected cases, with sclerotherapy than with adequate surgery.

The present study is a consideration of the efficacy of three chemically unrelated solutions which may be used in sclerotherapy of hemorrhoids. They are the 5% solutions of phenol in almond oil, quinine and urea hydrochloride, and sodium psylliate (Syl-nasol).

1. Gabriel, William B.: *The Principles and Practice of Rectal Surgery*, ed. 3, London, H. K. Lewis and Co., 1945.

Two hundred consecutive cases, all treated over a period of the past four and a half years, have been studied. All of these patients had three bleeding hemorrhoidal masses without coincidental prolapse. These have been designated by Runyeon² as first degree and constitute the most promising group for cure by sclerotherapy. Second and third degree internal hemorrhoids (i. e., those with varying degrees of prolapse) have been eliminated from the study. Those patients with only one or two hemorrhoids have likewise been eliminated for the sake of uniformity.

The technique used in this series was entirely conventional and has been repeatedly described in the literature.^{2, 3, 4} The patient was placed in either the inverted or Sims position and the gloved and lubricated finger introduced to relax the sphincter gently. An anoscope was then inserted and the hemorrhoid to be injected was brought into view. Following application of a mild antiseptic, the upper pole of the pile mass was punctured with a 25 gauge needle for a distance of approximately $\frac{1}{8}$ to $\frac{1}{4}$ inch. Thereafter, sufficient solution was injected to produce slight ballooning and blanching, the needle held in position for about 30 seconds, and then withdrawn simultaneously with the anoscope. The only deviation from this technique was in the use of sodium psylliate. No more than $\frac{1}{2}$ cc. of sodium psylliate, and never enough to cause blanching, was used at any time. After each injection, an anesthetic suppository was inserted into the rectum.

No more than one hemorrhoid was injected at one time and the frequency of injection

2. Runyeon, F. G.: *Hemorrhoids*, *Cyclopedia of Medicine, Surgery and Specialties*, Philadelphia, F. A. Davis Company, 1934, Vol. 10, p. 1062.

3. Bacon, H. E., and Wolfe, G. D.: *The Injection Treatment of Hemorrhoids*, *Illinois M. J.* 81: 202, 1942.

4. Mabrey, R. E., and Spears, G. E.: *Hemorrhoids with Special Reference to Injection Treatment*, *New England J. Med.* 220: 592, 1939.

tions was usually twice weekly, but occasionally once weekly.

EVALUATION OF INJECTANTS

Of the two hundred cases studied, 18 were treated with 5% phenol in almond oil, 133 with 5% quinine and urea hydrochloride, and 49 with a 5% solution of sodium psylliate. These agents have been evaluated as to post-injection discomfort, number of injections required for complete sclerosis, complications and technical simplicity.

It is felt that 5% phenol in almond oil is the least desirable solution used. Whereas, an average of only five injections (92 injections for 18 patients) were required to render the patient asymptomatic, it was judged that four (22%) had excessive post-injection pain, 11 (61%) had slight to moderate discomfort, and only 3 (19%) stated that the post-injection discomfort was negligible over the course of their treatment. It is of course impossible to interpret exactly the significance of post-injection pain due to the wide variation of pain threshold from one individual to another. A further complicating factor is that some of the patients would report virtually no discomfort after one injection and then complain of a rather severe sense of fullness following the next treatment. There was no way of predicting such occurrences and apparently there was no relation to the number or frequency of injections.

Out of the 92 injections, there were three moderate sloughs, all in different patients, for an average of slightly more than 3%. Aside from the slough, no complications were encountered in this group. However, Gass⁵ has reported a case of mesenteric thrombosis following injection of hemorrhoids with phenol.

Five per cent phenol in almond oil is the most chemically unstable compound of the three used and requires frequent replacement. In addition, it is usually necessary to warm the solution to facilitate injection.

Five per cent quinine and urea hydrochloride was used as an injectant in 133 cases, a total of 1186 individual injections being administered to this group. An average of

slightly less than nine injections per patient is thus computed. The maximum injections given one patient were 17 and the minimum 3. In the course of their treatment, only two of this group complained of excessive post-injection pain (1.5%), 36 (27.1%) had slight to moderate discomfort, and 95 (71.4%) stated that their discomfort was negligible. One patient complained of vertigo, tinnitus and a feeling of syncope immediately following his first injection. Injection was promptly discontinued in this patient and all of his symptoms subsided within an hour. He was subsequently injected with sodium psylliate without further difficulty. This patient has been included in the group injected with sodium psylliate but may be included in the quinine and urea hydrochloride group for the sake of percentages. Thus we can say that there was one instance of idiosyncrasy in 134 patients for an average of 0.75%.

Quinine and urea hydrochloride was responsible for three moderate sloughs out of 1186 injections for an average of 0.25%. It is readily obtainable and may be stored indefinitely at room temperature in 2 cc. ampules. It flows easily on injection and requires no preliminary warming.

Forty-nine patients were injected with sodium psylliate. They received 367 injections as a group, for an average of 7.5 injections per patient. Not one of these patients complained of excessive post-injection pain, 13 (27%) had slight to moderate discomfort, and 36 (73%) had no noticeable after effects. No sloughs occurred and there were no complications in this group. Sodium psylliate is quite stable and flows freely on injection without preliminary warming. Three of the patients who have been treated with sodium psylliate were pregnant—a condition that is felt to preclude the use of quinine and urea hydrochloride. No untoward effects were noted in the course of their pregnancies.

DISCUSSION

In the evaluation of any treatment, the end result is the most important factor. It is felt that a sufficient time interval has not yet elapsed to evaluate intelligently these patients as to the permanency of their results. Candor is served, however, by the statement that, of the 200 cases studied, five

5. Gass, O. C.: Mesenteric Thrombosis Following the Injection Treatment of Hemorrhoids, *Am. J. Surg.* 75: 279, 1948.

have eventually had to have surgery. All five of these patients were injected with quinine and urea hydrochloride and had been thought to be cured. Their periods of relief varied from six months to three years following injection. It is felt to be significant that all five of these patients suffered from persistent constipation for which they insisted on dosing with cathartics. It is certainly logical to presume that a greater permanency of result would have been obtained in these five people were their bowel habits returned to normal. This factor is brought out in another study to be published.⁶

The fact that all five patients eventually requiring surgery were injected with quinine and urea hydrochloride would seem to indicate a certain inferiority in results with this drug. This is felt to be more coincidental than actual, however. Of the eighteen cases treated with phenol in almond oil, virtually none could be found for follow-up study. It is certainly possible that several have come to surgery in other hands. Sodium psylliate has been used only in the past twelve months and it is certainly too early to judge recurrence rate in this group.

It is felt that the objective in injection treatment is the production of scar tissue and that permanency of results depends upon the maintenance of occlusion of the vascular spaces. It would therefore seem to be of no consequence as to what agent had been used in producing scarification.

From the literature on this subject, one can only conclude that injection treatment is virtually devoid of pain or discomfort. This has not been the case in this study. Only six patients (3%) in the entire series had severe enough discomfort to necessitate discontinuing work for the remainder of the day. All six stated that their discomfort was a sensation of heaviness or burning in the rectum with an associated desire to void and/or defecate. These symptoms persisted for varying periods up to six or eight hours after injection. It is interesting to note that these reactions were not constant in these six people and that some of their injections were followed by negligible discomfort.

6. Dodson, J. H., and Dodson, M. H.: To be published.

Sixty patients (30%) had the same symptoms after injection but of much milder intensity and of duration averaging about two hours. None felt that they should discontinue their work.

One hundred and thirty four (67%) had virtually no post-injection effects.

TABULATION OF RESULTS OF STUDY OF THREE SOLUTIONS			
	5% Phenol in Almond Oil	5% Quinine and Urea HCL	5% Sodium Psylliate
No. patients	18	133	49
No. injections	92	1186	367
Average no. injections	5	9	7.5
Severe post- injection discomfort	4 (22%)	2 (1.5%)	None
Slight to moderate post-injection discomfort	11 (61%)	36 (27.1%)	13 (27%)
Negligible post- injection discomfort	3 (19%)	95 (71.4%)	36 (73%)
Slough	3 (3%)	3 (0.25%)	None
Idiosyncrasy	None	1 (0.75%)	None

The apparent mechanism of this discomfort is that the sudden distention of the pile mass stimulates the parasympathetic nerve endings in the rectal mucosa. The greater the distention of the pile mass the greater the tendency to discomfort; hence many proctologists caution against the use of more than 1 cc. of injectant at one time. In this regard, the small required doses of sodium psylliate lessen the tendency to post-injection discomfort.

It should be mentioned that it is possible to produce a rather severe type of pain by injecting too close to the dentate line. The sclerosing agent may be forced down to an area that is innervated by somatic nerves and the result is immediate sharp pain. This reaction was not encountered in this series as all injections were made well above the dentate line.

Slough was infrequent in all but those patients injected with phenol in almond oil where an incidence of 3% has been noted. Although these sloughs may have been due to faulty technique, there seems to have been a definite predisposition on the part of phenol in almond oil for such occurrences. All sloughs healed without further complication.

As to range of usefulness, it is felt that,

within the general scope of indication for injection treatment, sodium psylliate offers the widest field of usefulness. Turell⁷ and Reuther and Almquist⁸ have also reported very satisfactory results with this drug. It is non-toxic and has been used without deleterious effects in pregnant patients. The time honored favorite of many proctologists, 5% quinine and urea hydrochloride, remains as an excellent drug. Five per cent phenol in almond oil has only one advantage: a given degree of sclerosis can apparently be attained with somewhat fewer injections.

7. Turell, Robert: Injectional Treatment of Internal Hemorrhoids, *Am. J. M. Sc.* 231: 350, 1947.

8. Reuther, T. F., and Almquist, C. O.: The Injection Treatment of Hemorrhoids. Results with a Sodium Psylliate Solution, *Illinois M. J.* 79: 50, 1941.

SUMMARY

1. Two hundred patients, all with first degree internal hemorrhoids, were injected. Eighteen were treated with 5% phenol in almond oil, 133 with 5% quinine and urea hydrochloride and 49 with 5% sodium psylliate (Synlasol).

2. It is concluded that while 5% phenol in almond oil will produce a given degree of sclerosis with fewer injections, either of the other drugs is superior in that they offer less discomfort to the patient, lower incidence of slough, and greater technical ease of administration.

3. The range of usefulness of 5% sodium psylliate overlaps that of 5% quinine and urea hydrochloride to a slight degree.

1014 Van Antwerp Bldg.

SURGERY IN THE TREATMENT OF PULMONARY TUBERCULOSIS

JESSE P. CHAPMAN, JR., M. D.
Selma, Alabama

The effective management of the patient with pulmonary tuberculosis is a cooperative enterprise requiring the combined efforts of three persons: the patient, the internist or phthisiologist, and the surgeon. Obviously, some cases of tuberculosis may become arrested without even the conscious effort of the patient—or in spite of him. More commonly, the disease responds to the onslaught of patient plus phthisiologist. In an increasingly larger number of cases, the allied forces of patient, physician, and surgeon are utilized in subjugating this "red invader."

The role of surgery in the treatment of pulmonary tuberculosis is unique in that surgery is employed merely as an adjunct to continuous and continued medical management rather than as a definitive procedure. That this role has assumed increasing importance is evidenced in a recent survey made in a small county sanatorium, in which 60 out of the 93 hospital patients had already undergone some type of surgical procedure.¹

Read before the Association in annual session, Mobile, April 20, 1951.

1. Shaw, R. R.: The Surgical Management of Tuberculosis, *S. Clin. North America*, April '49, pp. 539-556.

Tuberculosis is a chronic, generalized systemic infection with the tubercle bacillus. The most active and certainly the most infectious foci are usually located in lung tissue. The basic principle in the management of the disease is to put the diseased tissue in a state of rest so that the defensive mechanisms of the body may work to the best advantage. These normal defense mechanisms are aided by adequate nutritional measures and the intelligent use of antibiotics. Surgery may be employed to augment these procedures by: 1. relaxing an area of diseased tissue or collapsing an open cavity, 2. draining a hitherto undrained cavity, and 3. excising the major focus of infection.

Collapse therapy should only be instituted in those cases in which the sputum or gastric washings are positive for tubercle bacilli and in which the pathology, as evidenced by roentgenograms, is of the caseous or ulcerative type. The exudative and productive forms of pulmonary tuberculosis are generally considered non-surgical. In judging the effectiveness of any type of therapy, two criteria are generally employed: 1. the con-

version of sputum, and 2. closure of any cavities present.

Certain factors, local and general, determine what type of procedure to employ—and the advisability of any surgical procedure. The most important single local factor which should be determined prior to any collapse therapy is the presence (or absence) of endobronchial tuberculosis. Examination of the tracheo-bronchial tree by means of the bronchoscope has become so valuable in demonstrating the presence, activity, and extent of mucosal involvement that very few patients now receive initial collapse therapy of any type until an adequate bronchoscopic examination has been made. In the presence of acute endobronchial disease, collapse therapy should be postponed until the mucosal lesions are brought under control with antibiotics. The only contraindication to bronchoscopy is severe laryngeal tuberculosis.

General factors to be considered when a patient is brought up for surgery are the age of the patient, his general health, his personality, and his pocketbook. Elderly patients and persons in debilitated and weakened states do not tolerate surgery well. The patient who has unusual drive and energy and who has always led an active, vigorous life frequently becomes impatient and restless with the long period of bed rest required in the commonly employed sanatorium regimen; and he might well be considered for surgery at an earlier phase than the more placid and resigned and cooperative individual. Where the entire livelihood of a family depends upon the individual under treatment for tuberculosis, one must consider the economic factors involved and decide what course offers him the most rapid return to the status of bread-winner. Tuberculosis is a disease characterized by remissions and exacerbations, and surgery should be performed in a period of relative quiescence wherever possible. It is obvious from a consideration of all of these factors that the phthisiologist and surgeon must work together hand in glove in order to reap the greatest benefit from their labors.

The simplest and usually the earliest procedure employed in collapse therapy is pneumothorax, in which air is introduced into the pleural cavity. Unfortunately, on-

ly about 20% of patients with pulmonary tuberculosis are able to receive this type of therapy, the most common factor preventing them being the presence of pleural adhesions which will not permit the collapse of the lung. If these adhesions are small and string- or band-like, it is often possible to divide them and release the lung. The procedure for dividing these adhesions is known as pneumonolysis and may be performed through an open or a closed thoracic wall. Pneumothorax itself is not entirely without danger, since it carries a mortality of about 3%, exclusive of the mortality of its complications such as empyema, air embolism, and pleurobronchial fistula.

Paralysis of the diaphragm by phrenic crush is a procedure concerning the efficacy of which there is a great variance of opinion. At best, the results obtained are unpredictable; yet there are certain cases in which the use of this simple procedure may mean the difference between the arrest and progression of the disease. Phrenic crush is usually used to augment bed rest in the treatment of minimal lesions; to treat basal lesions under a thoracoplasty; and to treat non-cavernous flare-ups around an old fibrous lesion.

Pneumoperitoneum, or the introduction of air *beneath* the diaphragm into the general peritoneal cavity, also has had a varied reception. There are many who feel that it is as effective as or more effective than pneumothorax, and it is certainly less hazardous. Others feel that the procedure is of little value except in the treatment of bilateral pulmonary disease. All agree that serious complications are rare and that the procedure can be readily stopped if the patient complains of interference with his eating or if he develops ascites.

The keystone of the surgical treatment of tuberculosis remains the thoracoplasty, for it has proven itself to be the most successful procedure in the long run. The operative mortality for thoracoplasty is now less than 3%;² and the good results, as measured by conversion of sputum and closure of cavities, can be expected to be between 80 and 90%.³ It is to be borne in mind that these results

2. Ibid.

3. Moore, J. A., et al.: Use of Streptomycin in Pulmonary Resections, S. Clin. North America, December '48, pp. 1543-1546.

are being obtained in spite of the fact that much poorer risks are now being subjected to surgery—a fact which can be attributed to the great advances made in preoperative preparation and postoperative care. When apicolysis is utilized in addition to the usual technic of thoracoplasty, even very large cavities can be closed. In discussing the good features of this procedure, one must not overlook the facts that: 1. it gives adequate collapse yet conserves pulmonary function in uninvolved tissue, and 2. when performed in stages, it permits a variation in the extensiveness of the procedure to meet the needs of the individual patient. Thoracoplasty is usually performed when there is cavitation in one lung with the other lung free from disease or quiescent. Some men are now doing an occasional thoracoplasty over one lung in the presence of an open cavity in the contralateral lung so long as this cavitation is relatively stable. Thoracoplasty should not be done in the presence of bilateral active or extensive disease, in patients with low respiratory reserve, in growing children, or in persons of advanced age. It is not indicated for the treatment of large basal cavities or tuberculomas. It is not advisable to employ it in persons having active endobronchial disease, or stenosis of a major bronchus.

Various procedures creating pulmonary collapse by separating the parietal pleura from the endothoracic fascia have been devised in an attempt to get away from the several stages required for thoracoplasty and from the deformity which so often results from the removal of a large portion of the thoracic cage. Enthusiasm for these procedures is not so great as it was five years ago, at which time air, oil, paraffin, fat, muscle, plastic balls, and fiberglass had been used to produce extra-pleural collapse. The consensus of opinion now is that these procedures should not be employed routinely in place of thoracoplasty, but should be reserved for the poor-risk patients and certain cases with bilateral active apical disease. The two great reasons for these procedures now seem to be rather pointless for most patients; with careful preparation the average patient can tolerate the three stages of thoracoplasty as well as the one stage of extra-pleural collapse, and one has only to see patients returning after surgery at the

great tuberculosis centers, such as those operated by the Veterans Administration, to realize that there may be complete lack of deformity where adequate physiotherapy is employed in the post-operative period. It is not the operative procedure *per se* which produces the deformity but the failure to encourage early and active mobilization of the arm and shoulder girdle on the operated side.

Now that the mortality rate for pulmonary resection in patients having pulmonary tuberculosis has been lowered to a quite respectable figure in the neighborhood of 5%, there is a great temptation to remove the major focus of infection by surgical excision. Unfortunately, the late results of pneumonectomy in tuberculosis have been most disappointing, and those of lobectomy even more so. Segmental resection of a portion of a lobe is rarely indicated in tuberculosis for the involvement generally extends beyond such limited boundaries. One must remember that tuberculosis is a systemic disease and that no one could ever hope to cut it all out. Nevertheless, pulmonary resection has given satisfactory results in some instances where other procedures would have been doomed to failure; namely, the treatment of giant apical and large basilar cavities, of massive cavernous involvement of the entire lung, and of other lesions when accompanied by bronchial stenosis.

Cavity drainage by suction on a catheter placed into the cavity through an opening in the thoracic wall was introduced by Monaldi. The procedure consists of two brief stages which can be performed easily under local anesthesia and has great value in that group of patients who have large balloon or tension cavities or cavities with fluid levels. Monaldi drainage frequently improves their general condition sufficiently to permit thoracoplasty at a later date and often brings about closure of the cavity without additional surgery, although such closure does not indicate that thoracoplasty should not be performed.

Empyema is the most frequent and most troublesome complication of tuberculosis therapy. It complicates 3% of all pneumothoraces. A pure tuberculous empyema is non-surgical unless the fluid accumulates rapidly, develops fibrin clots, or becomes

loculated. At such times it should be treated by repeated aspirations under strict aseptic precautions. Mixed tuberculous empyema requires surgical drainage. Occasionally, the empyema cavity will have to be unroofed and drained, or thoracoplasty performed to bring the disease into a quiescent phase. Decortication may be employed to reexpand a collapsed lung if that lung shows minimal or moderately advanced disease, with the hope of obtaining additional pulmonary function. It may also be employed to remove the "pyogenic membrane" of the empyema cavity.

It has been estimated that the antibiotics, such as streptomycin, neomycin, para-amino-salicylic acid, tibione, and penicillin, have reduced the post-operative morbidity and mortality by at least 50%. Certainly no surgery should be contemplated in this enlightened age without adequate protection of the patient with these drugs. In spite of the fact that they seem to be of diminished value where the patient's bacilli show a definite resistance to the antibiotics, there can be little harm in using them for what little good they might do, even in such cases.

In brief summary, I would like to point out that surgery in tuberculosis might be considered merely as a brief interval in the pro-

longed continuous medical treatment of the disease during which an additional attempt is made to speed up the healing process within the diseased lung or to arrest an actively progressing disease. The surgical procedures, many of which are quite competently performed by men labeled internist or general practitioner or phthisiologist are pneumothorax, pneumonolysis, pneumoperitoneum, phrenic crush, extra-pleural pneumonolysis or collapse, thoracoplasty, pulmonary resection, cavernostomy, thoracotomy, and decortication. These procedures must always be employed in addition to adequate medical measures, never in place of them.

In 1950, there were 11,000 cases of pulmonary tuberculosis in the state of Alabama, but there are only 600 beds available in hospitals and sanatoriums in Alabama for their treatment. We have patients and the means to help them, but we do not have the beds to take care of them.

In closing, I would like to express my appreciation to the Alabama State Tuberculosis Association, and to Mr. K. W. Grimley, Secretary of the Association, who has been most helpful in providing me with material for use in this presentation.

A METHOD OF TREATING PARAPHIMOSIS

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and

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The term paraphimosis refers to the strangulation of the glans penis by a prepuce that has become retracted and held behind the glans. It occurs in individuals with a narrowed preputial meatus, which may be due to congenital or inflammatory causes. It is frequently seen in children as a result of masturbation or failure to replace the prepuce after a bath. It is equally common in the elderly man who has been catheterized or has had urethral instrumentation, and the prepuce has not been replaced following aseptic preparation of the penis. This is particularly prone to occur when the patient has had an anesthetic. The strangulation of the glans results in edema of the

prepuce, and if the condition is not corrected it can lead to ulceration and infection of severe degree.

The treatment that has been recommended has depended on the degree of strangulation. An early paraphimosis can usually be easily reduced by manual compression of the edematous prepuce until the edema has been displaced enough to allow the prepuce to slip back over the glans. If this fails, incision of the constricting band by dorsal or lateral slits has been the accepted method. Recently we had the opportunity to try another method of treatment and have used it on three patients to date. Although this is a small and inconclusive series, the re-

sults have been uniformly successful and impressive. One of the cases is presented to exemplify the technic:

C. H., white, male, age 10 years. This patient was seen in the office with a history that he had retracted the foreskin twelve hours prior to admission and had been unable to replace the foreskin to its normal position. He had always had trouble retracting the foreskin but was always able to replace it until the present episode. Examination revealed a marked paraphimosis with discoloration and edema of the prepuce distal to the constriction. Manual attempts to reduce this were unsuccessful and were extremely painful. Hyaluronidase (Wydase), 150 TR units in 2 cc. of normal saline, was infiltrated around the constricting ring. Within fifteen minutes the paraphimosis had spontaneously reduced. At the end of twenty-four hours the edema had disappeared and a circumcision was performed with an uncomplicated course.

The other patients were elderly men, with bladder neck obstruction, in whom indwelling catheters had been inserted by an attendant. They were seen six and eight hours respectively after this and both had paraphimosis that could not be reduced manually. They were treated with local infiltration of hyaluronidase and rapid reduction of the paraphimosis resulted. Both patients had very narrow preputial openings.

COMMENT

The enzyme hyaluronidase is capable of preventing the absorption of fluids from tissues. It has been clinically applicable, particularly in hypodermoclysis and local anesthesia. It also has been used in excretory urograms and the local use of drugs. We can find no report in the literature of its use in paraphimosis. Its action here is to hasten the absorption of the edema fluid in the prepuce thus interrupting the obstruction to the veins and lymphatics.

SUMMARY AND CONCLUSION

The local infiltration of hyaluronidase into the paraphimotic constricting band was used in three patients who had severe paraphimosis that could not be reduced manually. In all three patients the edema rapidly subsided and the paraphimosis was reduced without further treatment. It is suggested

that this technic be tried before manual compression or surgical intervention.

Forest Avenue at Pine (Dr. Williams)

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

This nine year old male child was admitted to the hospital with a history of having received chemical burns over the body from handling nitrate of soda three weeks prior to admission. About one week before admission he developed difficulty in opening his mouth.

Examination revealed numerous burns of the skin on the lower extremities. He could open his mouth only about a half inch or less. When he tried to open his mouth the effort induced a spasm of the masseter muscles with opisthotonus. There was moderate rigidity of the abdominal muscles.

Laboratory Findings: The blood study showed hemoglobin of 13 grams, a red count of 4,200,000, color index 0.9, and white count of 8,400, with neutrophils 68%, lymphocytes 29%, monocytes 1%, eosinophils 1% and basophils 1%. Urinalysis showed a trace of albumen, no sugar, and acetone 1 plus.

Course in the Hospital: He was given 60,000 units of tetanus antitoxin intravenously on admission and was given seconal every three hours. Curare was given intravenously at intervals by Dr. H. Adkins (anesthetist) with a respirator in the room. The curare produced immediate relaxation and reduced the severity of the spasms. He was given 50,000 units of penicillin every three hours.

The temperature went up to 108° just prior to death, four days after admission to the hospital.

This child had a typical case of severe tetanus.

Discussion: Tetanus is a possibility in all cases of burns, particularly chemical burns, and those due to gunpowder should receive prophylactic immunization.

The prevention of tetanus is possible by giving alum precipitated tetanus toxoid. This should be given to all infants starting

at 3 to 5 months of age. A booster dose should be given at 2½ years of age, and again before going to school, and at any other time the need arises. Since children seldom develop sensitivity to the toxoid it can be used repeatedly with impunity.

Antitoxin serves to neutralize the free toxin in circulation and render inert whatever fresh toxin is produced in the wound before it can attack the susceptible nerve tissue. It has relatively little effect in neutralizing toxin that has once reached the central nervous system. Although its value can be shown statistically beyond question, the results in the individual case are never dramatic and some progression of the symptoms often occurs after its administration.

Intrathecal administration of antitoxin is of little value.

The mortality remains between 30% and 50%, in spite of all therapeutic measures. The most accurate indication of prognosis in an individual case is the incubation period, death being highly probable if less than one week intervenes between the initial wound and the onset of symptoms—a circumstance known to Hippocrates. In cases with a longer incubation period of two weeks or more, and in those with local symptoms confined to the region of the wound, the outlook is much better. High fever and onset with convulsions are bad omens. Most patients who survive ten days of symptoms eventually recover completely. The disease leaves no sequelae.

Report of Autopsy (J. D. Burns, M. D.):

Clinical Diagnosis:

Tetanus
Chemical burns

Final Diagnosis:

Clinical tetanus
Skin: Multiple ulcerations of lower extremities (chemical burns)
Lungs: Partial atelectasis
Brain: Marked edema with pressure cone of cerebellum and uncinat gyrus
Spinal Cord (cervical): Focal hemorrhage
Stomach: Submucosal hemorrhage
Liver: Passive hyperemia
Kidneys: Passive hyperemia

Comment: Death in this case was due to cerebral edema which resulted in pressure on the medulla and damage to vital centers. The tetanus infection was probably acquired through the chemical burns.

External Examination: The body is that of a well developed, well nourished, young white male child, 133 cm. in length. The pupils are round, equal and 6 mm. in diameter. There are no petechial hemorrhages noted in the conjunctiva or skin. Postmortem rigidity is marked and the anterior abdominal wall has a more marked rigidity than is commonly seen at postmortem examination. On the medial surface of each thigh there are several peculiar ulcers measuring 3-4 cm. in diameter. The larger ones are recently healed and are rolled. The base is somewhat crusted, dirty and grey-red. The smaller, partially healed ulcerations are present in the skin around the margins of the larger ulcers and some on the lower legs are completely healed. There are needle puncture wounds in the skin of the right cubital fossa.

Peritoneal Cavity: When the fat of the anterior abdominal wall is incised it measures 1 cm. in thickness. There is no fluid and there are no adhesions present. There is one postmortem intussusception in the small intestine. The diaphragm lies at the 4th interspace bilaterally. The peritoneal surfaces are dry.

Pericardial Cavity: The pericardial cavity contains a small amount of straw-colored fluid. There are no adhesions.

Pleural Cavities: Pleural cavities are free of fluid and adhesions.

Heart: Heart weighs 110 grams. There is the usual amount of sub-epicardial fat. The myocardium is firm, red-brown, and averages in thickness 1 cm. in the right ventricle and 0.3 cm. in the left. There are several diffuse hemorrhages beneath the endocardium covering the left side of the interventricular septum. The valves and valve leaflets appear natural. The valves measure in circumference: tricuspid 9, pulmonic 4, mitral 6.5, and aortic 4.5 cm. There is no obstruction noted in the coronary arteries.

Aorta: In the intima of the aorta there are a few small bright yellow, slightly raised plaques in the descending arch of the aorta

and in the abdominal portion. These are near branches of the aorta either in the costal or renal arteries. They measure only a few mm. in diameter.

Lungs: The right lung weighs 160 and the left 140 gm. There is some depression of the pleural surface on the posterior portion of the lower lobe but more marked on the right. In the surface made by cutting, the lung is subcrepitant but otherwise is crepitant, and bright pink. The bronchi and bronchioles are filled with bloody mucus.

Liver: Liver weighs 700 grams. The capsule is smooth, glistening and red-brown. The lobular markings are indistinct. The gallbladder is filled with thick, yellow bile but there are no stones. The bile ducts are patent.

Spleen: The spleen weighs 80 grams. The capsule is smooth and glistening. There is one partial fissure extending across the diaphragmatic surface from the superior to the inferior border. Between the edges of this fissure there are fine fibrinous adhesions. Along the upper margin of the spleen where it is attached to the posterior abdominal wall there are several fibrinous adhesions.

Adrenal Glands: Adrenal glands weigh together 5 to 7 grams. They show no gross changes.

Kidneys: Kidneys weigh together 130 grams. The capsule strips with ease from the smooth red-brown surface. The cortex is even and averages 0.5 cm. in width. The pyramids are dark red. The pelves and ureters appear natural.

Urinary Bladder: The urinary bladder contains a small amount of cloudy urine. There are no tumors or hemorrhages noted in the lining of the urinary bladder.

Prostate Gland: The prostate gland is very small and shows no nodules.

Gastro-Intestinal Tract: The esophagus shows no unusual change. In the fundus of the stomach along the lesser curvature there are numerous irregular areas of hemorrhage beneath the mucosa. These measure up to 0.5 cm. in diameter. There are no evidences of ulcer or tumor in the stomach or small intestine. The small and large intestine show no gross change.

Pancreas: Pancreas weighs 90 grams. It

is lobulated and yellow pink. There is no evidence of tumor.

Thymus Gland: Thymus gland weighs 15 grams. There are a number of petechial hemorrhages beneath the capsule.

Mesentery: In the mesentery there are firm grey-red lymph nodes measuring up to 1.5 cm. in diameter.

Head: Scalp and calvarium appear natural. The brain weighs 1500 grams. The convolutions are markedly flattened and the sulci are shallow. There is a distinct pressure cone on the inferior surface of the cerebellum and the inferior surface of the uncinate gyrus at the base of the brain. The dura mater, dural sinuses, accessory nasal sinuses, middle ears and hypophysis appear natural. When the coronal sections are made through the brain the blood vessels in the white matter are evident by bright-red, pinpoint areas. It is difficult to determine whether these are actual petechial hemorrhages or simply marked congestion of the vessels. There are no tumors noted.

Spinal Cord: The spinal dura mater appears natural. There is a small amount of yellow fat on the dorsal surface of the dura mater. When cross sections are made through the spinal cord at one cm. intervals the surface made by cutting bulges but otherwise appears natural.

Anatomical Diagnosis: Clinical tetanus

Skin: Multiple ulcerations of lower extremities (Chemical burns)

Lungs: Partial atelectasis

Stomach: Submucosal hemorrhages

Kidneys: Passive hyperemia

Brain: Marked edema with pressure cone of cerebellum and uncinate gyrus

Spinal Cord: Edema

Microscopical Description:

Heart: In sections of myocardium, all blood vessels are filled with erythrocytes. The cross striations are faint.

Lungs: In sections of lungs the blood vessels are filled with erythrocytes. There are a few masses of black pigment granules in the fibrous tissue about the blood vessels.

Liver: Sinusoids are filled with erythrocytes.

Gallbladder: Sections of the gallbladder show no unusual changes.

Spleen: In sections of spleen the lymphoid follicles are small and the splenic sinuses are filled with erythrocytes.

Adrenal Glands: Sections of adrenal glands show that all blood vessels are filled with erythrocytes but no other changes are noted.

Kidneys: In sections stained with Schiff's reagent there is slight thickening of the glomerular capsule but the capillaries appear patent.

Prostate Gland: Sections of prostate gland show a few small gland spaces in the fibromuscular stroma.

Gastro-Intestinal Tract: Sections of stomach show that all blood vessels are filled with erythrocytes, especially those directly in the superficial portion of the mucosa.

Pancreas: In sections of pancreas islands of Langerhans are numerous. No changes are noted in the islet, acinar or interstitial tissue.

Lymph Nodes: In sections of lymph nodes all vessels are filled with erythrocytes.

Hypophysis: In sections of hypophysis there are no unusual changes.

Brain: In sections of brain all vessels are filled with erythrocytes. In sections of the upper spinal cord there are scattered hemorrhages.

Heart Blood Culture: No growth.

Culture of Ulcer: Gram positive cocci and Gram negative rods recovered.

Hoarseness—The diagnostic steps used to detect the causes of hoarseness are simple and are neither time-consuming nor costly to the patient. They must be made with care and accuracy and with the utmost honesty and sincerity of the physician with himself, to the end that every portion of the larynx is adequately and thoroughly inspected during the examination. History of external trauma, of vocal abuse, of onsets of hoarseness while shouting, of foreign body aspirations, etc., is significant. In children the history should include whether or not the child has had immunization for diphtheria, and in acute infections in an adult this question should also be asked and the answer recorded. The history of persistent progressive hoarseness makes one consider first and foremost the possibility of laryngeal carcinoma.—*Holinger, M. Ann. District of Columbia, Jan. '52.*

Civil Defense—A need for civil defense has been greater or less for many nations from time to time. While others were being subjected to enemy attacks, civilians of the United States

have been fortunate enough to escape attack for so long a time, that it is understandable when an unrealistic attitude arises here or there with reference to civil defense. But persistent and generalized neglect is another matter and one not to be condoned.

With this thought in mind, is it any wonder that those working at civil defense find it difficult to understand cynical criticism of our very new civil defense plans, or broad and unwarranted charges that the present status of civil defense in the United States, after only eight months of existence, is due to an unrealistic approach to the civil defense problems? I believe we must consider the facts.

Human life and productive skill cannot be replaced readily. This is a matter of major importance to the United States, where the numbers of our people are limited, where their skills increase and capabilities are highly specialized only after long, carefully directed training, and where they are concentrated into densely populated areas of unbelievable vulnerability to attacks. Another nation of more people, less skilled, carries less risk to its people than we do, while at the same time it can create a menace to us. As critical as material damage to our cities could be, under the circumstances, the truly precious factors which we must preserve are life, health and effective production. The immediate, deepest and most understandable concern of all of us in the presence of enemy attack would be for the health and safety of our wives, children, loved ones, relatives and close friends. How long would our Armed Forces continue to fight if individual members who have gone out to face the enemy cannot be reasonably sure that loved ones at home are safe? Support of our Armed Forces and the maintenance of full civilian industrial support of a future war effort therefore depends upon our ability to preserve maximum physical and mental health of all of our civilians, or to restore it where interrupted. That is why the physician is the bulwark of this Nation, why the physician has been and must continue to be a leader in every community civil defense preparation for survival, a hazardous survival from any damage an enemy could devise or direct against us.

Today there are some, and even prominent people, who say that civil defense will be unnecessary if we develop strong Armed Forces. We should tremble at any single time such an opinion is expressed in our country. That is the same type of fallacious and undermining reasoning found before and during the early days of World War II, which led the German civilians to their destruction. Furthermore, the far-flung military might of Japan was fully expected to preclude attacks upon the Japanese homeland or its civilians.

The British authorities, government, and people, in the period 1935 to 1940, anticipated and assured reasonable civil defense preparation five years in advance of enemy attacks upon the civilian communities of the United Kingdom.—*Wilson, Connecticut M. J., Jan. '52.*

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TRICHINOSIS

"Trichinosis is not an uncommon disease in this country. The incidence of human trichinella infection is about 17 to 18 per cent of the population. The incidence as obtained at autopsy or from dissecting-room cadavers has been reported from 2.8 per cent at Duke Hospital in 1930 to 27.6 per cent in Boston in 1931. There is a wide range of variation in incidence in different localities depending upon the method of study and the peculiar problem regarding handling of pork in each area."

The above is from the opening paragraph of the recent article by Senter¹ dealing with this infestation. The North Carolina investigator goes on to tell us that "Few persons purposely eat raw pork, yet large amounts of raw meats are consumed in the form of poorly cooked sausage and rare pork meats. It is not uncommon to cut a piece of pork sausage with a casing and find the inside rare while the outside is crisp and well done. Hamburgers contain some raw pork and are often served rare.

"The diagnosis of trichinosis is often suspected on clinical grounds on the basis of eosinophilia, fever, generalized aching and petechiae. Yet, as shown by hospital reports, few cases are proven by finding the larvae in muscle tissue, by skin test, or by precipitin or complement fixation tests. Apparently, not enough attention nor persistence is given to establishing a definite etiologic diagnosis of obscure fevers and eosinophilias." And he also states that "An equivocal diagnosis can be made if there are eosinophilia, a positive skin test, and a positive complement fixation or precipitin test. The skin test is not an accurate diagnostic test if used alone. The finding of larvae in muscle tissue makes the diagnosis certain."

The author reminds us that trichinosis can be found and verified in patients who have had no weight loss, nausea, vomiting, diarrhea or cough. And he says that "All fresh pork should be thoroughly cooked before being eaten, as trichinae are readily killed when heated to a temperature of 137 degrees F." And "Since treatment of persons with

1. Senter, William J.: Trichinosis: Its Prevalence, Diagnosis and Prevention, South. M. J. 44: 1127 (Dec.) 1951.

trichinosis has not been successful, the emphasis must be placed on prevention."

Senter says that "Since trichinosis is a common disease in the United States, its public health aspects are apparent. The disease could be reduced to a bare minimum if more adequate rat control and proper garbage disposal measures were carried out. The education of the public to a more thorough knowledge of the dangers of improperly prepared and cooked raw pork could eliminate the disease as a public health problem."

The author has done well to call our attention to trichinosis, an entity which is still more enshrouded in mystery than it should be. For many years it was assumed that it was largely a northern disease, probably due to the alleged custom of cooking pork less thoroughly in northern than in southern latitudes. And from time to time autopsy reports have tended to confirm this view. For several years past it has been realized that trichinosis is more prevalent in the South than was thought, just as for two or three decades it has been known that amebic dysentery is no longer a southern disease but is prevalent in the North also. Senter is certainly upon firm ground when he calls our attention to the "wide range of variation in incidence in different localities depending upon the method of study and the peculiar problem regarding handling of pork in each area." Practitioners will do well to heed Senter's admonitions and to bear trichinosis in mind constantly.

ANOTHER CANCER FILM AVAILABLE

Uterine Cancer: the Problem of Early Diagnosis is the fourth in the series of teaching films sponsored by the American Cancer Society, Inc., and The National Cancer Institute.

Like its predecessors, it uses sound, color and animation to underscore the importance of early diagnosis and treatment. The picture is rich in clinical and laboratory material. Gross and microscopic pathology of benign and malignant diseases are demonstrated.

Among the medical advisors who assisted in the production of the film were Drs. George N. Papanicolaou, R. Gordon Douglas,

and Locke L. MacKenzie of New York City, Joe V. Meigs of Boston, and Eugene P. Pendergrass of Philadelphia.

The film has one theme: to illustrate the complete practicability of drastically reducing deaths from cancer of the uterus by adherence in general office practice to the routine pelvic examination of all adult women.

It is available to County Medical Societies through the Alabama Division of the American Cancer Society, Ramsay-McCormack Building, Birmingham 8; as are also Cancer: the Problem of Early Diagnosis; Breast Cancer: the Problem of Early Diagnosis; and Gastro-Intestinal Cancer.

County Medical Societies are urged to avail themselves of any one or all of these four films. No cost is attached for their use.

Present Day Psychiatry—It is important that we always speak the language which our patients understand, and not confuse them with terms they do not understand. In carrying out diagnostic procedures, it is well to let the patient know the purpose of the procedure, or at least something of the nature of the procedure, in order that he may feel that he is cooperating in an experience, rather than being a guinea pig. When the diagnosis is made, it is well to explain this to the patient in such a manner that he can understand it.

There is a prevalent attitude among the physicians of today that it is best not to inform patients of hopeless prognosis, and they side-step this obligation by informing some responsible member of the family, and telling the family that they do not feel it right to bother the patient with such knowledge. This is a very immature and unreal approach to the physician's responsibility to his patient, and it places a load of responsibility on the family, which is far out of keeping with the reality of the situation, and denies them the opportunity for complete expression of feeling with the patient during his last days. We fail to realize that approaching death, and dying, may be just as much of a positive experience, and just as clear an expression of the capacities within the individual, as any other experiences in life.

After we have completed diagnostic studies we are in a position to make therapeutic recommendations. It is part of the physician's responsibility to apply all the scientific knowledge and skill which he has available in treating the disability present, but at the same time he must recognize the emotional implications of his treatment and attempt to maintain an honest relationship with his patient.—*Chalmers, J. M. A. Georgia, Dec. '51.*

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

FOR EXAMPLE

W. A. Dozier, Jr.

Director of Public Relations

A recent newspaper article points out an interesting, even if disgusting, situation that has arisen over in Georgia. Mr. R. P. Swan, welfare chairman of Peach County, has resigned because his county has more children on relief than in school and because more persons are drawing assistance checks than are operating farms.

When he resigned, Mr. Swan said,

"I don't think any person objects to really dependent children receiving aid in order that they may have adequate food, clothing and schooling. However, many of these children merely have been abandoned by one or more parents, simply because the parent or parents know that the welfare department will provide funds for rearing these children, leaving the parents free to earn, spend and beget other children to become wards of the government.

"There is one case of one irresponsible man who was the father of ten children by ten different women in one twelve-month period here in this county, and all of these children were potential wards of the welfare department.

"The specific reason for my resignation is that the local board has no authority. The local board is merely a screen behind which the department operates. The local department and the state department can use the local board as a group to pass the 'buck' to when the unsuspecting public makes an inquiry or complaint."

Mr. Swan's plea for local control is a point well taken; but the whole situation exemplifies an hypothesis that many people hold to be true, one which many others overlook or scoff at in their efforts to do more good. Is not this one good example of the moral degeneration that may be brought on by more and more security which is given a person by his overzealous government?

In all fairness it must be admitted that one needs to know many more facts about the situation, the type of county—rural or urban, the backgrounds of the people, and ad infinitum. However, no matter what could be learned about these people, it still seems apparent that somewhere along the line something is wrong. It further seems whatever is wrong has not been helped by long distance control of a fund set up to help a bad situation. And it further seems that this is an example of that historic occurrence which is one of the prime objections to a paternalistic, overcentralized government.

Amebiasis—With the proper choice of drugs and with due consideration for the principles of therapy nearly all patients with amebiasis can be freed of infection rapidly and completely. There are two phases of the disease which must be controlled: one, the surface or luminal infestation of the bowel, and two, the tissue or metastatic infestation. There is no single drug capable of eradicating both phases. Each requires treatment with the appropriate amebicidal drug. Furthermore, the drug for the bowel phase and the drug for the tissue phase must both be given at the same time. This is referred to as concurrent therapy. In the past, intermittent and alternating courses of drug therapy often failed. This is illustrated by the poor results in our cases treated by this method.

The two amebicides available for treatment of the tissue phase of the infection are chloroquine and emetine. Of the many compounds available for treatment of the bowel phase we believe the most satisfactory one to be diodoquin. It is recommended that the following treatment be instituted. Diodoquin is administered orally before each meal in a dose of 9.6 grains (with a total adult dose of 28.8 grains per day) for 21 days. Concurrently, chloroquine is administered orally in 1 gram doses daily for two days and thereafter in 0.5 Gm. doses for 19 days. Sulfasuxidine or sulfaguanidine should be given during the first seven to ten days of combined therapy to combat bacterial infection in the ulcerated bowel. Secondary bacterial infection in a metastatic lesion should be treated with an appropriate antibiotic, e.g., penicillin.

Chloroquine has high amebicidal properties and is particularly efficacious in amebic hepatitis.—Hamilton & Zavala, *J. Iowa M. Soc.*, Jan. '52.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

ENCOURAGING SIGNS IN CANCER

Tuberculosis is often referred to as "the optimistic disease." That is because tuberculosis patients have a strong tendency to be optimistic about their outlook. Others may worry about their chances of getting well. But not they. They take it for granted that they will. There are exceptions of course. But, considered as a whole, tuberculosis victims are vigorous optimists.

In another sense, cancer might also be called "the optimistic disease." That is not because cancer victims are particularly inclined to take a cheerful view of their condition and their chances of recovery. It is because the cancer picture has changed substantially in the past several years. And the change, fortunately, has been for the better. There are solid grounds for optimism, although this is still a serious disease, still a great killer, still a bringer of vast unhappiness to its victims and their loved ones.

Some time ago an official of the American Cancer Society announced that "some real progress" had been made within the past few years in the field of cancer control. That progress, he said, had consisted of greater medical knowledge regarding both the cause and the cure of cancer.

That optimistic American Cancer Society official was Douglas Poteat. He was then vice-president of that organization. Mr. Poteat expressed confidence that "research is producing more leads than at any time in history."

"It is impossible," he said, "to predict when we will beat cancer, but there is a definite feeling that we are getting there."

One of the causes for Mr. Poteat's optimism was the research work now being carried on so extensively in the field of cancer control. Much of it is supported by grants from the American Cancer Society. At the

same time that he made his optimistic statement, he revealed that the American Cancer Society had awarded research grants involving sums totaling in excess of three million dollars. The awards included 20 individual grants and 46 fellowships to research scientists in 86 hospitals, laboratories and universities in all parts of the United States. They also included 18 institutional grants made directly to colleges and hospitals. These latter, it was announced, were "to be used on research projects promising in nature and in urgent need of funds." They were typical of the new aggressiveness in cancer-curbing.

The Federal government is also very much in the cancer control field. Part of the money you pay in Federal taxes goes to support the National Cancer Institute. Its medical scientists too are looking for newer and more effective means of preventing people from getting cancer. They are also trying to find means of curing it after it develops.

About the same time Mr. Poteat was telling about that "real progress" in cancer-curbing, the National Cancer Institute announced that it was working out a new cancer research program. Its primary purpose was to double the number of cancer treatments. The program is being conducted in cooperation with some of the nation's outstanding hospitals and medical schools. Through it, it is planned to provide mass tryouts by which various diagnostic methods may be tested. Particular attention is being given to methods of detecting cancer in an early stage, when it is most easily cured.

The new program was explained by Dr. J. R. Heller, director of the National Cancer Institute. In a formal statement, he said:

"If every new cancer were diagnosed early, modern therapy could save about two-thirds of all cancer patients, or twice the number now being saved.

"Independent investigators have announced diagnostic tests and published limited findings, but no organized concerted effort has been made

to evaluate the conflicting claims and put selected tests to mass trial.

"We are entering this phase of cancer investigation, first, to establish whatever validity the various diagnostic tests might have, and, second, to promote original investigations leading to improved or new tests."

Tests that show promise in the laboratories, Dr. Heller said, may be applied later to thousands of people. Some of them will be cancer victims. Some will not have cancer.

The research programs of the American Cancer Society and the National Cancer Institute hold bright promise. They are being watched with interest and hope.

Already medical and hospital authorities are saying that half of today's cancer cases probably could be cured by processes now available. Cancer authorities particularly express this view. Among them are speakers at the annual clinical congresses of the American College of Surgeons.

Referring to the already-mentioned belief that half of all present-day cancers could be cured, Gladwin Hill wrote in a dispatch to *The New York Times*:

"This represents a tremendous improvement over the situation twenty-five years ago, when coordinated attacks on the disease were getting under way, and even over that of ten years ago, it was stated. Great strides in treatment in the last few years were reported through the application of wartime developments, such as wholesale blood transfusions and penicillin for the performance of 'massive' operations."

Medical leaders have called attention also to another encouraging sign of progress in the over-all warfare against cancer. Not only is the ratio of cures to cases steadily increasing. Surgery, one of the most important agencies in the cure of cancer, is becoming less hazardous. Dr. Frank E. Adair, of New York City, reported a sharp reduction in the fatality rate of cancer operations. This well known authority, who was then, and presumably, still is, associate professor of surgery at Cornell Medical College and attending surgeon at Memorial Hospital, reported that the cancer operative fatality rate had been brought down from 18 per cent just a few years before to only two per cent.

Another cancer optimist is Dr. Edward J. Ottenheimer. He referred to statistical data

covering more than 40,000 cancer cases in his own state of Connecticut. These records, he said, showed that the curability of cancer was increasing year by year. They indicated particularly remarkable progress recently, he emphasized.

The speaker mentioned a six-year test period. During that period, he declared, the increase in five-year survivals from cancers in various parts of the body ranged from nine to 37 per cent. ("Five-year survivals" means cancer victims who are still living after five years.)

These gains in the survival rate of cancer victims could not be attributed to any revolutionary changes in cancer therapy, Dr. Ottenheimer emphasized. He ascribed them to earlier diagnosis and treatment and the reduced hazards from cancer surgery.

Another speaker bringing a message of optimism to a cancer gathering was Dr. Charles Puestow. He was then chief of the surgical service at the Veterans Hospital at Hines, Illinois. He announced that no fewer than 4,000 cancer patients had been cured at that large institution in 12 years. This impressive number of cures takes on added significance when we consider that they were achieved among only some 11,000 cancer cases. Moreover, an exceptionally large percentage of those 11,000 cases were advanced and presumably incurable.

The newer optimism surrounding the cancer outlook is reflected in the official slogans for the fund-raising campaigns of the American Cancer Society. You may have seen them on posters. You may have read them in your newspaper. You may have heard them on the radio. If so, you must have been impressed by the hope they express for cancer victims. For those slogans emphasized cancer's optimistic side.

Mrs. Oveta Culp Hobby and Mefford R. Runyon, both at that time officials of the American Cancer Society, expressed the belief some time ago that optimistic cancer slogans are at last justified.

"The problem is really one of education, to teach that your life is in your own hands," they said in a joint statement. "If you get a lump or sore that won't heal, take it to your doctor in time. That means now, not next month."

These American Cancer Society officials declared that four tumors out of every five could be readily detected. Moreover, they added, progress in preventing surgical infection has made it possible to give advanced cancer patients the benefit of the latest surgical procedures. They mentioned especially the use of improved antibiotics as important factors in that improvement.

Mrs. Hobby and Mr. Runyon called attention to two surveys which, they pointed out, show that real progress has been made against cancer. One was made in 1940 but included cancer cases treated in 1935. In 1946 a second survey was made. It included cases treated in 1941. The earlier survey showed that only 18 per cent of the men and only 25 per cent of the women had been cured. The later survey brought the cheery news that men's cures had increased to 25 per cent, or one in four. The cures among women patients had increased to just under 40 per cent.

Dr. Leonard A. Scheele, Surgeon General of the United States Public Health Service, has also added his substantial bit to the impressive array of evidence that cancer is less fearsome than it was some time ago. He said:

"Fifty years ago a diagnosis of cancer was virtually a death sentence. Today nearly one out of every three cancer patients is saved. That is an impressive measure of progress. But, if we can save one out of three, why not two out of three?

"Actually, with our present knowledge of surgery and radiology, there is no reason why the present cure ratio should not be doubled."

Still another cancer optimist is Dr. George Thomas Pack, well known cancer surgeon and radiologist of New York City. While on a visit to Birmingham, he called attention to the widely held belief that advanced cancer is incurable. This he called a "misconception."

Cancer patients, even those whose disease is advanced, should not give up hope, he said. He spoke of the "many dramatic operations" that are now being performed. These operations, he went on, "would have been believed impossible ten years ago." Organs that once were considered essential to life are now being removed "with complete success," he said. Dr. Pack spoke of an opera-

tion in which the esophagus was removed, the stomach was lifted and connected to the gullet and the patient recovered.

These optimistic opinions from such eminent authorities are cheering indeed. They offer special comfort to the cancer victim. But they should not lull him or anyone else into believing that cancer has ceased to be a dangerous and fatal form of illness.

Eternal vigilance is still needed. Indeed it is highly vital. The old saying that "the early case is the best-cured case" is still true. So everyone should be his or her own cancer policeman. Any evidence of abnormality that might be beginning cancer should bring an immediate visit to a doctor's office. A sore that fails to heal properly and fairly promptly should make one think of this disease. So should bleeding from a natural body opening. So should persistent and unexplained indigestion. So should a lump, especially in the breast. So should persistent hoarseness. So should difficulty in swallowing.

Remember, one of the most powerful weapons in the fight against cancer is knowledge. All of us need to keep ourselves fully informed regarding this still-dangerous, still-formidable enemy of health.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

December 1951

Examinations for diphtheria bacilli and Vincent's	385
Agglutination tests (typhoid, Brill's and undulant fever)	631
Brucella cultures	18
Typhoid cultures (blood, feces, urine and milk)	509
Examinations for malaria	109
Examinations for intestinal parasites	8,475
Serologic tests for syphilis (blood and spinal fluid)	25,818
Darkfield examinations	12
Examinations for gonococci	1,237
Examinations for tubercle bacilli	2,433
Examinations for meningococci	0
Examinations for Negri bodies (microscopic)	68
Water examinations	1,283
Milk and dairy products examinations	3,362
Miscellaneous	1,182
Total	45,522

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1951

	Oct.	Nov.	E. E.* Nov.
Typhoid and paratyphoid	3	1	3
Undulant fever	2	3	4
Meningitis	11	5	8
Scarlet fever	30	43	96
Whooping cough	40	54	67
Diphtheria	65	45	83
Tetanus	4	4	3
Tuberculosis	176	189	215
Tularemia	1	0	1
Amebic dysentery	2	3	1
Malaria	15	12	74
Influenza	65	107	141
Smallpox	0	0	0
Measles	35	73	25
Poliomyelitis	56	37	5
Encephalitis	4	0	0
Chickenpox	13	58	61
Typhus fever	3	3	27
Mumps	33	118	28
Cancer	473	256	201
Pellagra	0	1	3
Pneumonia	62	87	125
Syphilis	485	360	966
Chancroid	15	17	13
Gonorrhea	294	238	478
Rabies—Human cases	0	1	0
Positive animal heads	28	14	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE ALABAMA MALARIA CONTROL RESIDUAL SPRAY PROGRAM AND HOUSE-FLY CONTROL IN 1951

Contributed By

Oscar V. Lopp, Sanitarian (R)

Alabama C. D. C. Entomologist

The Alabama State Health Department, in cooperation with the Communicable Disease Center of the U. S. Public Health Service, conducted a series of house inspections in 1951 designed to indicate the degree of housefly control resulting from the use of residual insecticides applied in the Malaria Control Residual Spray Program. Inspections totaling 1025 were made in four south-central counties, distributed as follows: 320 chlordane-DDT inspections in Autauga County, 320 DDT inspections in Lowndes County, and 385 unsprayed inspections in Montgomery and Elmore Counties. Inspections were made from April through October, and were uniformly distributed throughout the season both by month and by age-class of spray residue. Inspections of sprayed houses were made by the writer,

and unsprayed house inspections were made by an experienced member of the Residual Spray Program personnel.

Spraying operations in the observation area began on March 12th and ended on May 31st, with only one application being made for the season. Autauga County received a county-wide application of 2½% chlordane at the rate of 100 milligrams per square foot to the walls and ceilings of the kitchens and under porches of houses, inside of outbuildings, and as a larvicide on manure piles. The walls and ceilings of the remaining rooms of the houses received an application of 5% DDT at the rate of 200 milligrams per square foot. Lowndes County received a county-wide application of 5% DDT applied at the rate of 200 milligrams per square foot to the walls and ceilings of all rooms and under the porches of houses, inside outbuildings, and as a larvicide on manure piles. Elmore County and the south half of Montgomery County were not included in the 1951 Residual Spray Program, and for purposes of this investigation were considered as unsprayed.

The 5% DDT emulsion spray used in the inspection area was made from the 25% DDT-xylene-Triton concentrate regularly used in the Residual Spray Program. However, the 2½% chlordane emulsion spray used in Autauga County in 1951 differed decidedly from any chlordane spray previously used, since Antaro A-200 was employed as the emulsifier, and kerosene used as the solvent. Experimental use of this emulsion was justified by consideration of two factors: (1) the price of kerosene is considerably less than the price of xylene, and (2) kerosene is much more readily available than xylene, which might be difficult to obtain in times of national economic stress. The following formula was used for making 50 gallons of 40% chlordane concentrate using Antaro A-200 emulsifier and kerosene as the solvent:

34.5 gallons kerosene
13.0 gallons chlordane
2.5 gallons Antaro A-200

The 2½% finished spray, when applied by the three-gallon capacity knapsack-type sprayer, was made by mixing 0.6 quart of 40% chlordane concentrate with 9.0 quarts of water.

Tables I, II, and III indicate the number of flies observed per high-count room by age-class of residue for the sprayed inspections, and by month for the unsprayed inspections.

TABLE I			
Number of Flies Per High-Count Room for 320 Chlordane House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	80	2296	28.7
1-2	80	2975	37.2
2-3	80	3424	42.8
3-4	80	2752	34.4
Total 320	Total 11447	Season Average 35.8	

TABLE II			
Number of Flies Per High-Count Room For 320 DDT House Inspections			
Age of Residue (Months)	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
0-1	80	2486	31.1
1-2	80	2838	35.5
2-3	80	3682	46.0
3-4	80	3101	38.8
Total 320	Total 12107	Season Average 37.8	

TABLE III			
Number of Flies Per High-Count Room For 385 Unsprayed House Inspections			
Month	Total Houses Inspected	Total Flies Observed	Flies Per High-Count Room
April	60	1393	23.2
May	60	3369	56.1
June	60	10474	174.6
July	60	7309	121.8
August	60	7016	116.9
September	60	5975	99.6
October	25	1505	60.2
Total 385	Total 37041	Season Average 96.2	

Comparison of the contents of Tables I, II and III indicates (1) no appreciable difference in the effectiveness of chlordane compared with DDT, and (2) a significant reduction of flies in sprayed houses.

Tables IV, V, and VI show the distribution of houses by fly density groups for the sprayed and unsprayed house inspections.

TABLE IV							
Distribution of Houses by Fly Density Groups and Age of Residue for 320 Chlordane House Inspections							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	16	21	13	16	11	3	---
1-2	---	11	23	32	12	2	---
2-3	---	6	24	29	17	4	---
3-4	---	6	32	29	12	1	---
Total	16	44	92	106	52	10	---
Percent of Total	5.0	13.8	28.7	33.1	16.3	3.1	---

TABLE V							
Distribution of Houses by Fly Density Groups and Age of Residue for 320 DDT House Inspections							
Distribution of Houses by Fly Density Groups							
Age of Residue (Months)	0	1-10	11-25	26-50	51-100	101-150	Over 150
0-1	17	13	14	21	12	2	1
1-2	1	10	26	29	12	2	---
2-3	---	3	23	33	17	4	---
3-4	---	10	25	24	20	1	---
Total	18	36	88	107	61	9	1
Percent of Total	5.6	11.3	27.5	33.4	19.1	2.8	0.3

TABLE VI							
Monthly and Seasonal Distribution of Houses by Fly Density Groups for 385 Unsprayed House Inspections							
Distribution of Houses by Fly Density Groups							
Month	0	1-10	11-25	26-50	51-100	101-150	Over 150
April	---	19	20	15	6	---	---
May	---	3	10	17	23	5	2
June	---	---	2	7	7	19	25
July	---	---	1	9	21	14	15
August	---	---	1	7	26	12	14
September	---	---	3	7	32	12	6
October	---	---	5	8	9	3	---
Total	0	22	42	70	124	65	62
Percent of Total	0.0	5.7	10.9	18.2	32.2	16.9	16.1

The data presented in Tables IV, V, and VI illustrate that (1) a much larger number of sprayed houses than unsprayed houses appear in the lower fly-count groups, (2) a proportionately lesser number of sprayed houses than unsprayed houses are contained in the higher fly-count groups, and (3) there was no appreciable difference in effectiveness between the chlordane and DDT sprays used. From these tables, it is observed that 47.5% of the chlordane houses and 44.4% of the DDT houses had from none to twenty-five flies per high-count room, but that only 16.6% of the unsprayed houses were in this lower group. It is also observed that only 19.4% of the chlordane houses and 22.2% of the DDT houses had over fifty flies per high-count room, but that 65.2% of the unsprayed houses were in the higher group.

Table VII presents a comparison of the 1951 housefly inspection data with similar data (Lopp, 1950) obtained in 1950. The geographic areas inspected in the two years were relatively the same except for size, the smaller 1951 inspection area being contained within the larger 1950 area. Inspection procedures were the same for both years, but the observations were made by different personnel each year.

TABLE VII

Comparison of Housefly Counts in Sprayed and
Unsprayed Houses for the Years 1950-1951

A. Flies Per High-Count Room		
Treatment	1950* Season Average	1951** Season Average
Chlordane	32.2	35.8
DDT	36.1	37.8
Unsprayed	74.8	96.2
B. Percent of Total Houses Having High Count from None to 25 Flies		
Treatment	1950* Season Average	1951** Season Average
Chlordane	49.5%	47.5%
DDT	43.9%	44.4%
Unsprayed	24.1%	16.6%
C. Percent of Total Houses Having High Count of Over 50 Flies		
Treatment	1950* Season Average	1951** Season Average
Chlordane	19.7%	19.4%
DDT	22.1%	22.2%
Unsprayed	55.8%	65.2%
*1380 Chlordane inspections ** 320 Chlordane inspections		
1380 DDT inspections 320 DDT inspections		
856 Unsprayed inspections 385 Unsprayed inspections		

Table VII is presented chiefly to illustrate the similarity in the effectiveness of the chlordane-kerosene-Antarox A-200 spray used in 1951, compared with the chlordane-xylene-Triton spray used in 1950. In connection with this data, mention should be made that the appreciable difference shown in the unsprayed inspection figures for the two years is considered to be largely the result of different evaluation procedures employed by different personnel, rather than the result of any unusual difference in actual fly populations in the inspection area, since no such considerable variation was evident to other observers.

SUMMARY

Analysis of the results of the house inspections made in connection with the 1951 Malaria Control Residual Spray Program in Alabama indicates that (1) decidedly fewer houseflies are found in sprayed houses than in unsprayed houses, (2) chlordane and DDT sprays appear to be approximately equally effective in control of houseflies, and (3) a 2½% spray made from a chlordane-Antarox-kerosene concentrate is apparently as effective against houseflies as one made from a xylene-base concentrate.

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BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR SEPTEMBER 1951 AND
COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During September 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	7400	**	**	29.1	29.1	30.3
Total stillbirths	189	**	**	24.9	26.3	27.2
Deaths, stillbirths excluded	1972	1177	795	7.8	8.4	8.0
Infant deaths— under one year	264	139	125	35.7	34.8	34.4
under one month	196	106	90	26.5	25.7	24.7
Causes of Death						
Tuberculosis, 001-019	53	20	33	20.9	25.4	24.0
Syphilis, 020-029	11	4	7	4.3	3.6	6.0
Dysentery, 045-048	2	1	1	0.9	—	2.0
Diphtheria, 055	—	—	—	—	1.6	1.2
Whooping cough, 056	2	1	1	0.9	2.0	0.8
Meningococcal infections, 057	3	3	—	1.2	—	0.8
Poliomyelitis, 080, 081	7	6	1	2.8	1.2	0.8
Encephalitis, 082, 083	1	1	—	0.4	—	—
Malaria, 110-117	1	1	—	0.4	0.4	0.8
Malignant neoplasms, 140-200, 202, 203†	193	151	42	75.9	97.9	80.3
Diabetes mellitus, 260	16	12	4	6.3	7.5	10.4
Pellagra, 281	2	1	1	0.9	1.2	1.6
Vascular lesions of central nervous system, 330-334	225	114	111	88.5	92.8	89.5
Other diseases of nervous system, 300-318, 340-398	34	17	17	13.4	11.9	10.8
Rheumatic fever, 400-402	1	1	—	0.4	1.2	1.6
Diseases of the heart, 410-443	565	351	214	222.3	253.7	226.5
Diseases of arteries, 450-456	18	14	4	7.1	10.3	11.2
Other diseases of the circulatory system, 444-447, 460-468	28	12	16	11.0	11.9	10.4
Influenza, 480-483	—	—	—	—	2.4	1.2
Pneumonia, 490-493	50	32	18	19.7	23.0	18.4
Bronchitis, 500-502	—	—	—	—	2.0	0.8
Appendicitis, 550-553	3	2	1	1.2	3.2	3.6
Intestinal obstruction and hernia, 560, 561, 570	7	2	5	2.8	4.8	5.6
Gastro-enteritis and colitis (under 2), 571.0, 764	20	6	14	7.9	7.5	11.2
Cirrhosis of liver, 581	8	7	1	3.1	7.5	5.2
Diseases of pregnancy and childbirth, 640-689	14	4	10	18.4	21.2	15.4
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	3	—	3	4.0	2.6	2.6
Congenital malformations, 750-759	29	22	7	3.9	3.1	3.6
Accidental deaths, total, 800-962	174	123	51	67.7	63.4	49.5
Motor vehicle accidents, 810-835, 960	94	69	25	37.0	27.0	25.6
All other defined causes	414	236	178	163.0	160.2	155.8
Ill-defined and unknown causes, 780, 793, 795	93	33	60	36.6	32.5	52.3

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the September report of the years specified.

**Not comparable or not available.

†Excluding Hodgkins' disease (201); leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

ACTH MAY AID IN EARLY DETECTION OF DIABETES

How ACTH may aid in the early detection of potential diabetics not discoverable by other means was described in the February 2 Journal of the American Medical Association.

This new method of diabetic detection consists of two tests—the first being the usual glucose tolerance test, in which an oral dose of 100 grams of glucose is given a suspected diabetic patient. Blood sugar determination tests are then made at 30 minute intervals for three hours. This is followed by a second test, in which 100 milligrams of ACTH are injected into the patient one hour before oral administration of 100 grams of glucose. Blood sugar determination tests are again repeated.

In the new test, in potential diabetes the blood sugar level will rise and fail to return to normal within the three hours, and/or an increase in the intermediate blood sugar determinations over those of the first test will be noted, according to Dr. Herbert Berger, of the Berger Clinic, Richmond Memorial Hospital, and the U. S. Public Health Hospital, Staten Island, N. Y.

The use of cortisone or ACTH has been found to aggravate enormously the diabetic state, and "therefore, it seemed reasonable to suppose that, since cortisone was so diabetogenic, this material might serve to increase the sensitivity of the glucose tolerance test and thereby make the earlier detection of potential diabetics feasible," Dr. Berger said.

Dr. Berger performed such tests on 50 persons—12 known diabetics over the age of 50 years, 14 brothers or sisters over the age of 50 of known diabetics, 18 patients over the age of 50 without diabetes or a diabetic family history, and 6 patients under 30 years of age without diabetes or a diabetic family history.

Positive diabetic reactions were seen in all of the 12 known diabetics and the 14 brothers or sisters. In each group without diabetes

or a diabetic family history, one positive reaction was discovered.

Dr. Berger stressed, however, that further study is necessary, and that many years of medical follow-up will be needed to determine whether or not clinical diabetes eventually will ensue in the suspected cases.

The importance of discovering diabetes early so treatment can be instituted before dangerous complications arise was pointed out by the doctor. Diabetic detection drives have been launched, but many patients with normal reactions to standard detection tests subsequently have developed diabetes, he added.

OUTLOOK FOR SCHIZOPHRENIC PATIENTS MUCH BETTER TODAY

The outlook for schizophrenic patients is distinctly better today than it was 15 years ago, partially because of electroshock therapy, it was stated in the current Archives of Neurology and Psychiatry, published by the American Medical Association.

Schizophrenia, a mental disturbance which produces a split personality and is evidenced in the performance of acts apparently out of character for a given individual, constitutes about 59 per cent of all serious psychiatric complaints in the United States.

A comparative report based on the study of 112 women suffering from schizophrenia during 1946-47 and 119 women so afflicted during 1934-35 was presented by Drs. George E. Currier, Catherine Cullinan and David Rothschild, of the Worcester State Hospital, Worcester, Mass.

Of the 112 patients treated during the 1946-47 period, 75 received electroshock therapy, while 37 did not, according to the report. Of the 75, 56 (75 per cent) were improved or much improved, as compared to 11 (30 per cent) of the 37 who did not receive such treatment.

Over-all results, however, showed that 67 (60 per cent) of the 112 in the 1946-47 group were improved or much improved following

the period of treatment, as compared with 27 (22.5 per cent) of the 119 in the 1934-35 group. Complete failures following therapy were only 20 per cent for the 1946-47 group, in contrast with 48 per cent of the 1934-35 group.

The doctors pointed out that they believed other factors also might have influenced the outcome of treatment. These include age on admission, duration of illness prior to hospitalization and type of onset of the psychosis.

It was found, according to their report, that better results occurred in patients under 40 years of age on admission to the hospital than those over 40. The results were more favorable in patients with illnesses of six months' duration or less, and progressively less satisfactory as the duration of illness become greater. It was learned, in addition, that those patients with an acute onset of schizophrenia responded more favorably than those with a gradual onset of the psychosis.

A number of other variables also showed trends which were suggestive, though below the level of statistical significance, the doctors pointed out. Patients who had one or more periods of hospitalization, with return to the community prior to the present study, showed a greater tendency toward improvement than those who had no previous attacks. There were more favorable outcomes of married patients, as compared with others. Patients with low average intelligence tended to exhibit slightly better results than those with high average or superior intelligence, and somewhat better results were noted in patients with a history of mental illness in the immediate family than in patients without such a family history.

KNOWLEDGE OF HUMAN NATURE NEEDED BY TODAY'S PHYSICIAN

Today's physician needs an innate knowledge of human nature in addition to his medical knowledge to properly treat his patients, in the opinion of Dr. John C. Whitehorn, psychiatrist-in-chief of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore.

Writing in the February 2 Journal of the American Medical Association, Dr. Whitehorn stated that medical practice has been

greatly changed by triumphs over infectious disease through bacteriological study, sanitary engineering, chemotherapy and the antibiotic drugs—resulting in the lengthening of the life span. However, he added:

“Chronic disease and marginal conditions of persistent ill health now demand a larger share of medical attention and require from the physician greater understanding and skill in dealing with human nature.

“In the necessary task of aiding individual patients to adapt to stress, to modify their ways of living, and especially to resolve more effectively the internal emotional conflicts that spoil life for so many unfortunate persons, the modern physician needs something that traditional medical education and training have not provided.

“Psychiatry has found some answers and has developed some methods of studying human nature that offer possibilities for physicians to work out better solutions to some of these problems.”

It is not necessary, however, for every medical man to have special psychoanalytic training to size up properly the attitudes and emotional problems of his patients, Dr. Whitehorn stated.

An experienced physician with common sense and a certain practical knowledge of life can comprehend a patient's personal problems once the physician has gained an appreciation of the medical importance of motivation, and of the emotional problems and possible physiological disturbances involved in motivational conflicts, he said.

A considerable segment of the problems of chronic ill health is made up of frank mental and emotional disease—the psychoses and neuroses, according to the article. In addition, in a considerable proportion of cases, emotional maladjustments and bad habits of thinking and feeling definitely participate in the production of morbid tissue pathology—the so-called psychosomatic conditions.

Dr. Whitehorn pointed out that many illnesses, which are not in themselves psychotic, neurotic or psychosomatic, require for their proper management modifications in the pattern of life adjustment and modifications in patients' attitudes. This, he said, is a task of adaption that may strain the personality resources of many patients.

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A CASE OF PULMONARY HYPERTENSIVE PAIN OR HYPERCYANOTIC ANGINA

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Mobile, Alabama

The patient presenting himself with the complaint of chest pain is interesting for a number of reasons. First of all, the diagnosis of pain, despite its high incidence as a presenting complaint, is intricate and beset with difficulty; it is completely subjective and must always be analyzed carefully, weighed with delicate judgment and seasoned with suspicion. Chest pain, especially, must be considered serious because of the universal possibility of heart disease, and the increasing frequency of arteriosclerotic heart disease manifested by angina pectoris and myocardial infarction. The possibility of chest pain arising from other sites, e. g., the esophagus, trachea, pleura, pericardium, chest wall, or abdomen, makes accurate etiologic diagnosis of serious import to the patient, from the point of view of prognosis, restriction of activity and the possibility of cure. This is especially true when consideration is taken of the large, and increasingly larger, number of cardiac neuroses seen in patients correctly or incorrectly diagnosed as heart disease.

The physician in his approach to the patient with chest pain should always satisfy himself with regard to three points: (1) Does the patient have heart disease? (2) If so, what kind of heart disease is it? (3) Could any other process be causing this pain?

These points are illustrated by the following case report:

CASE REPORT

J. P. P., a 58 year old white male tobacco drier, entered Mobile City Hospital in the

early morning of 25 July, 1951, with dyspnea and severe substernal squeezing type pain. This pain had been of sudden onset, beginning about eight hours prior to admission, and was described as being severe, dull, oppressive and confined completely to the substernal area. The onset of the pain was while the patient was inactive; he gave no history of recent heavy meal, exposure to cold or excitement. It did not radiate and had continued with undiminished intensity in spite of the administration of oral demerol (300 milligrams) and twelve tablets of nitroglycerine (12/150 grain total dose).

There was a history of heart disease for about five years duration, minimal substernal pain having been present at irregular intervals. This had been associated with climbing stairs, walking three blocks, or with sustained exercise. The pain was accompanied by dyspnea and relieved by nitroglycerine. He had had three severe attacks similar to the present one, lasting for long periods of time; but they were relieved by morphine and oxygen.

A cough had been present for a similar length of time as the cardiac symptoms; it was non-productive in nature and was worse at night and in the early morning. There was a history of frequent colds, and pneumonia twice with pleurisy once as a young man. Treatment for his heart condition had consisted of digitalization several years ago but he had taken none for two years prior to onset of the present illness.

On admission his temperature was 98.0, pulse was 36, respirations 40, and blood pres-

sure 88/66. He was severely dyspneic and orthopneic and was intensely cyanotic.

The chest was barrel-shaped and findings of emphysema were present. There were inspiratory and expiratory wheezes present over both lung fields. Heart sounds were distant and muffled. No friction rub, thrill or murmur was elicited.

Impression at that time was coronary artery insufficiency with myocardial infarction and heart block. Further physical examination was deferred due to the emergency of the situation. He was given demerol 100 mgm. intramuscularly (there was a history of morphine sensitivity) and nasal oxygen. Two hours later his pulse was 62 and he looked and felt so much better that oxygen was discontinued.

The next morning a complete physical examination was performed. Temperature was 98.0, pulse was 62, respirations 22, and blood pressure 156/86. He was still acutely ill but was more ashen-grey than cyanotic and was fairly comfortable despite a mild dyspnea. Clubbing of the fingers and hypertrophy of the toenails were noted. The lungs were essentially the same as at the time of admission, and the heart sounds were still muffled and distant despite the improvement in pulse and blood pressure. The remainder of the physical examination was negative for other abnormalities.

In the hospital he had a similar attack, less severe than the one on admission, which was relieved by demerol and oxygen. Other than this his course in the hospital was completely uneventful; he felt good the entire time and constantly inquired when he could be discharged.

Laboratory work on admission showed 5.2 million red cells, 8,000 white cells, with 81% segmented neutrophils, 17% lymphocytes and 2% monocytes. Urinalysis was normal and the blood Kahn was negative. Erythrocyte sedimentation rate was 12 millimeters in an hour, with a packed cell volume of 54. Electrocardiogram showed low QRS components, with mild right axis deviation and T waves changes in leads II and III, but there was nothing to suggest recent infarction.

A repeat blood count two days after admission revealed essentially the same picture as the one on admission, mild erythro-

cytosis and normal white count and differential. Repeat erythrocyte sedimentation rate five days after admission was 10 millimeters in an hour. A repeat electrocardiogram was similar to the one on admission.

Arm to tongue circulation time using Decholin was 12 seconds and venous pressure was 139 millimeters of saline. Chest film was reported normal except for old rib fractures. There was never a tachycardia, significant temperature elevation, or a friction rub present.

Discussion

The history and clinical picture on admission suggested a diagnosis of myocardial infarction with heart block. The ready response to oxygen and demerol in less than two hours made this diagnosis somewhat untenable. When the temperature did not rise, the erythrocyte sedimentation rate and white cell count were normal, it was excluded as a serious possibility. The electrocardiographic tracings were not consistent with such a diagnosis.

The presence of signs of chronic lung disease, i. e., emphysema, erythrocytosis, hypertrophic pulmonary osteoarthropathy, and hypertrophic toenails, suggested the possibility that the pain arose from the lungs and not from the heart. Burgess and Ellis¹ discuss cases similar to this and call them hypercyanotic angina. Harrison and Resnik² call this syndrome pulmonary hypertensive pain. They list four criteria which warrant its diagnosis: (1) disorders, hindering pulmonary circulation; (2) wheezing and cyanosis during seizures; (3) right axis deviation and changes in T2 and T3; (4) ineffectiveness of nitroglycerine as compared to drugs which relieve wheezing.

The illness of this patient fits these criteria. First of all, he did not have a myocardial infarction. He had emphysema; he was cyanotic and wheezed in his attack; he had consistent electrocardiographic changes; and the attack was relieved by oxygen but

1. Burgess, A. M., Jr., and Ellis, L. B.: Chest Pain in Patients with Mitral Stenosis, with Particular Reference to so-called "Hypercyanotic Angina," *New England J. Med.* 226: 937-942 (June 11) 1942.

2. Harrison, T. R., and Resnik, W. H., in Harrison, Principles of Internal Medicine, The Blakiston Co., Philadelphia, 1950, p. 34.

not by nitroglycerine. Drugs to relieve respiratory difficulty were not given.

It is not meant to say that this patient did not have heart disease. He had angina pectoris most certainly; this cannot be too strongly emphasized. Its presence and the imminent danger of myocardial infarction at any time cannot be underestimated. But angina probably must be present for this syndrome to occur.¹

Burgess and Ellis¹ ascribe the site of the pain to the myocardium and its cause to anoxia. From the description of this patient's pain, it could most easily be so. These authors state that "relief of pain by oxygen . . . suggests that anoxia is the cause and that general desaturation of the blood with oxygen is an important factor. In addition,

there is probably a decrease in the amount of blood reaching the left side of the heart through the impaired pulmonary vascular bed, and hence the left ventricular output is diminished. This in turn causes impairment of coronary blood flow, which thus further enhances the myocardial anoxia. It is likely that an abnormal heart is also a necessary part of the picture. . . The common denominator in all cases is myocardial hypertrophy of the right ventricle."¹

SUMMARY

1. A case simulating myocardial infarction is presented.

2. The possibility of its being pulmonary hypertensive pain is discussed.

City Hospital

RUPTURED UTERUS

EDWIN G. WALDROP, M. D.

Birmingham, Alabama

Rupture of the uterus not infrequently implies an error in the art of obstetrics. The incidence of this relatively rare emergency is one index to the quality of obstetrical practice. It is understood, from a practical standpoint, that the complete elimination of ruptured uteri is only an ideal goal. If, on the other hand, the case histories of ruptured uteri are reviewed, it is found that the majority of the ruptures are avoidable, and it is on this group that we need to apply our efforts.

The Obstetrical Department of the Medical College of Alabama has been established since June 1945, and this report is a review of the cases of ruptured uteri that were managed here. It covers from July 1, 1945 to June 30, 1950.

We have had 10,167 indigent deliveries during the last five years at the Jefferson-Hillman Hospital and have managed six proven cases of ruptured uteri and two probable cases. This is an incidence of 1 to 1273 (proven incidence of 1 to 1694). Table I

shows the reported incidence of ruptured uterus from several large medical centers.

Our gross maternal mortality was 25 per cent (one case admitted in irreversible shock) with a fetal mortality of 75 per cent (six cases; one delivered a stillborn before admission). Delfs and Eastman¹ had a maternal mortality of 50 per cent and a fetal mortality of 80 per cent; Bill² reported a maternal mortality of 21.7 per cent and a fetal mortality of 62 per cent; Fitzgerald³ reported a maternal mortality of 54.76 per cent and a fetal mortality of 79.07 per cent; Dugger⁴ reported a maternal mortality of 61 per cent and a fetal mortality of 62 per cent; McNeile⁵ reported a maternal mortality of 62 per cent and a fetal mortality of 66 per cent; and Beacham and Beacham⁶ reported a ma-

1. Delfs, E., and Eastman, N. J.: *Canad. M. A. J.* 52: 376, 1945.

2. Bill, A. H.; Barney, W. R., and Melody, G. F.: *Am. J. Obst. & Gynec.* 47: 712, 1944.

3. Fitzgerald, J. E.; Webster, A., and Fields, J. E.: *Surg., Gynec. & Obst.* 88: 652, 1949.

4. Dugger, J. H.: *S. Clin. North America* 25: 1414, 1945.

5. McNeile, L. G., and McBurney, R. D.: *California & West. Med.* 47: 73, 1935.

6. Beacham, W. D., and Beacham, D. W.: *Am. J. Obst. & Gynec.* 61: 824, 1951.

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Read before the Birmingham Obstetrical and Gynecological Society, June 16, 1951.

TABLE I. REPORTED INCIDENCE OF RUPTURED UTERUS

Author	Years	Cases	Incidence	Location
Sheldon	17	26	1 : 1829	Boston Lying-In Hospital
McNeile	12	30	1 : 578	Los Angeles Co. Hospital
Dugger	10	100	1 : 3029	Philadelphia County
Bill	17	23	1 : 2756	Cleveland Maternity Hosp.
Fitzgerald	20	42	1 : 2196	Cook Co. Hospital
Whitacre	10	44	1 : 220	Peiping, China
Delfs & Eastman	45	53	1 : 1010	Johns Hopkins Hospital
Beacham & Beacham	37½	96	1 : 1328	Charity Hosp. of La.
Present Report	5	8	1 : 1694	Jefferson-Hillman Hosp.

ternal mortality of 47.9 per cent and a fetal mortality of 79.6 per cent.

RUPTURE OF THE UTERUS DURING PREGNANCY

A rupture of the uterus may occur at any time during pregnancy, but it is usually seen in the last trimester, in fact in the last month, at which time the uterine distention is at its greatest.

No case in this series ruptured before the onset of labor. Dugger⁴ reported a 25.8 per cent incidence of rupture during pregnancy. Most of the cases that rupture during pregnancy have a history of previous damage to the uterine wall. Unexplained ruptures probably occur in uteri with some inherent weakness in the muscular wall.

Rupture of a cesarean scar comprises the largest number of cases in this category. It is for this reason that the dictum, "once a cesarean, always a cesarean," had its origin. The incidence of uterine rupture in cases with previous cesarean sections varies from one to four per cent. In classical cesarean sections the incidence approaches 4 per cent, while in low cervical sections it is in the neighborhood of 0.4 per cent. If a transverse incision is made in the lower cervical segment, the incidence is further reduced. Kerr,⁷ Pfaneuf,⁸ and Stander⁹ prefer the low cervical transverse incision.

Approximately 80 per cent of the uteri that rupture secondary to cesarean section

occur before the onset of labor. In these, the maternal mortality approaches 20 per cent and the fetal mortality approaches 70 per cent.¹

It is amazing to find that there are very few cases of ruptured uterus associated with a previous myomectomy. In a personal letter to Kerr and Moir,⁷ Victor Bonny stated that he had never witnessed nor had he ever read in the literature of a single case of rupture of the uterus following myomectomy. There are no cases in our files to indicate a contrary opinion, but it seems that the likelihood of rupture depends upon the depth the myometrium has been invaded. I believe that the operator who performed the myomectomy in the case under question is the most qualified to decide whether vaginal delivery should be given a trial.

RUPTURE OF THE UTERUS DURING LABOR

Any weakness in the uterine wall may result in a rupture during labor. It is just by chance that some pregnancies are maintained until uterine contractions begin. There is an occasional case where the weakness of the musculature is of such a nature that it takes strong and prolonged uterine contractions to cause the rupture eventually. Rupture of a cesarean section scar is again the most frequent cause of uterine rupture during labor. Malposition of the fetus, uterine anomalies, cephalopelvic disproportion, and obstructive pelvic tumors are real but less frequent causes. Of all of the predisposing factors to rupture, the one most frequently overlooked is a previously damaged lower uterine segment from past parturition. A large fetus, multiparity, and strong uterine contractions in combination are sufficient factors to alert the obstetrician to the possibility of uterine rupture.

7. Kerr, J. M. M., and Moir, J. C.: *Operative Obstetrics*, ed. 5, Baltimore, Williams & Wilkins, 1950.

8. Pfaneuf, L. E.: *Am. J. Obst. & Gynec.* 32: 240, 1936.

9. Stander, H. J.: *Textbook of Obstetrics*, ed. 5, New York, D. Appleton-Century Co., Inc., 1945.

Delfs and Eastman¹ found that forty per cent of their ruptured uteri occurred spontaneously during labor. All of these cases were multipara and each averaged 6.4 babies.

During labor there have been four cases of spontaneous uterine rupture treated on the indigent service at the Jefferson-Hillman Hospital in the last five years. Of the four cases two were proven and two were probable. Two cases followed prolonged labor, one followed a previous cesarean section, and the cause of the fourth was not determined since delivery and rupture occurred before admission. There was only one primigravida in this group, and it was one of the unproven cases.

CASE REPORTS

Case 1.—P. B. J., a 35-year-old colored female, para 6-0-4, was admitted with term pregnancy and a history of active labor for 11 hours. Antepartum course was normal and the pelvis was described as adequate. Presentation was R. O. A. and contractions were strong. Previous labors had ranged from three to forty-eight hours. Her babies had weighed from 6 to 8½ pounds at birth. The cervix never dilated more than 5 cm. and the head never engaged. At the end of 33 hours of labor the abdominal contour changed, contractions ceased, 400 cc. of blood passed from the vagina, and a sterile vaginal examination failed to reveal a presenting part. The fetal heart tones were not heard. Blood was started and a subtotal hysterectomy was done. An 8½ pound stillborn was found free in the abdominal cavity and an anterior tear was found in the lower uterine segment. The patient recovered without morbidity.

This is a case of spontaneous rupture in a multipara occurring after prolonged labor. The rupture was probably avoidable. Thirty hours of labor for a multipara is in most instances too long. Interruption of this labor should have been made before 30 hours had elapsed and at a time when the progress became arrested. A correction to allow vaginal delivery or a cesarean section should have been done.

Case 2.—F. B., a 31-year-old colored female, para 5-0-3, was admitted with term pregnancy in labor for 8 hours. The antepartum course was normal. The pelvis was described as contracted with the conjugate vera measuring 8.5 cm. The patient gave a history of past obstetrical difficulties. This labor began with the breech presenting but an external version converting the fetus to an LOA was thought to have been accomplished. Rupture developed after 38 hours of labor and at that time full cervical dilatation was not present and the presenting part had not

engaged. A laparotomy was done and a stillborn was delivered from the abdominal cavity. A transverse tear was found on the anterior surface of the lower segment and a supracervical hysterectomy was done. The patient recovered without morbidity.

This case speaks for itself. A cesarean section should have been done as soon as the patient went into labor, because the pelvic measurements were too small for vaginal delivery. The fact that the breech presented was another ominous sign. Prolonged labor without progress cannot yield happy results.

Case 3.—J. M., a 19-year-old colored primipara, was admitted to the emergency room with imperceptible blood pressure. She had delivered a stillborn at home and was brought to the hospital because of shock. The family reported that she had not bled profusely at home. Very active shock therapy was given without satisfactory response and this prompted a laparotomy which revealed a small hematoma in the right broad ligament. At the time of the operation this was not considered a rupture and the uterus was left in situ. Despite 5,000 cc. of blood the patient died in irreversible shock after 22 hours of work.

This case is not considered a proven case of rupture, but it is possible that it might have been. The small hematoma could have been a small rupture, and it is well known that severe shock can develop in cases of this type without hemorrhage. Despite the shock a hysterectomy might have been beneficial. An intra-arterial blood transfusion is another procedure that could have been tried. It must be emphasized that the chances of survival in this case were markedly reduced because the patient was in profound shock for about 2 hours before treatment was begun.

Case 4.—H. P., 19-year-old colored female, para 2-0-2 (twins), was admitted with term pregnancy in irregular labor. Contractions began about 3 hours before admission. The antepartum course was normal. She previously had a classical cesarean section at another hospital, indication being toxemia, where twins were delivered. Morbidity followed this section and for this reason a repeat section was planned. An hour or so after the patient was admitted to the ward a small nodule was felt on the anterior surface of the uterus. It looked at first as if a small fibroid or a fetal part were pushing up. It was noted that this area was very tender and a diagnosis of ruptured uterus was made and a laparotomy was done. The fetal elbow was found protruding through the tear tamponading it. The amniotic sac had ruptured but very little fluid had escaped. The old uterine scar was quite fibrotic, reducing the blood supply to a minimum. A living, 6 pound

4½ ounce baby was delivered. The uterine scar was resected and sutured in order to leave the uterus in this young female. The oviducts were ligated to prevent future pregnancies. Infection was not a factor in this particular case. The patient recovered without morbidity.

This case illustrates several points. A classical scar will rupture spontaneously and may rupture quietly. A scar weakened by increased fibrous tissue secondary to infection is more likely to rupture than one healing by primary union. The rupture of a cesarean section scar is often quiet, and there is less blood loss associated. Cases of this type should be carefully instructed to report to the hospital as soon as labor begins. Elective repeat section two weeks before term could not be condemned. Careful examination should be made in these cases to prevent overlooking a rupture. In these cases a nodule should not be casually dismissed as a fibroid. Tenderness along the old scar should suggest impending rupture.

RUPTURE OF THE UTERUS DUE TO MANIPULATIVE PROCEDURES

Weakness in the uterine wall, whether due to a previous cesarean section scar, previous traumatic delivery, increased vascularity in the lower segment from a placenta praevia, abruptio placenta, or the like, contraindicates intra-uterine manipulative procedures.

A uterus that has been weakened cannot withstand undue trauma. All procedures that require intra-uterine invasion must be done with great care and trepidation. It is the lower segment that will tear because it is thin.

Delfs and Eastman¹ reported a 1.6 per cent incidence of rupture due to version and extraction with a maternal mortality of 50 per cent. We have had 1.26 per cent rupture from version and extraction, and one of our 3 cases expired, giving us a 33.3 per cent mortality rate. The fetal mortality rate in the version cases was 66.66 per cent (2 cases).

CASE REPORTS

Case 1.—G. T., a 25-year-old colored female, para 4-0-3, in the eighth month of pregnancy, was admitted with a history of trauma to her abdomen with subsequent development of irregular uterine contractions. This patient had a cesarean section 6 years before but had two full term deliveries per vaginam since then. There was a small amount of vaginal bleeding noted and a diagnosis of traumatic separation of the placenta was made. A small Voorhees bag was in-

serted into the cervix, and after its delivery cervical dilatation had reached 3 to 4 cm. After the bag came out more blood issued from the cervical os and to tamponade bleeding the operator did an internal podalic version bringing the feet down and soon delivered a 4 pound 1½ ounce stillborn fetus. Manual removal of the placenta revealed a ruptured uterus in the region of the old cesarean scar. Subtotal hysterectomy was done but the patient continued to bleed. She died in shock despite 1300 cc. of whole blood.

This is the only mortality among the cases that ruptured in the hospital. The death resulted from hemorrhage due to a cervical laceration which was not observed. This promoted the rule to examine the cervix following a lower uterine segment laceration as in routine delivery. The cervix was torn by extracting the baby through an incompletely dilated cervical canal. The uterine rupture probably resulted from trauma to the scarred uterine wall during the version. The possibility of a small quiet rupture as a result of the trauma cannot be ruled out.

Case 2.—J. R., a 37-year-old colored female, para 11-1-9, was admitted with term pregnancy in active labor. The antepartum course was normal and the pelvis was noted to have a flat inlet. After 6 hours of labor the operator performed a version and extraction through a 6 cm. dilated cervix. The indication was fetal distress. A 7 pound 4½ ounce living baby was delivered. A cervical laceration was found and repaired. The patient continued to bleed and 3½ hours after delivery a subtotal hysterectomy was done, because an incomplete uterine rupture was found in the lower segment. Four thousand cc. of blood were administered. The patient recovered without morbidity.

The complication of version and extraction is represented here. The rupture was probably an extension of the cervical tear.

Case 3.—M. W., a 22-year-old colored female, para 1-0-0, was admitted in active labor. The antepartum course was normal. The pelvis was classified as gynecoid. After 25 hours of labor a version and extraction was done with moderate difficulty. A 7 pound 6 ounce stillborn was delivered. The next day a large mass was palpated in the right broad ligament which was thought to be a hematoma from a uterine rupture. The patient had a very morbid course but was discharged in good condition.

This is not a case of proven rupture; however, it was decided in obstetrical conference to classify it as such since it was questionable. The membranes had ruptured early in the course of labor, and the molding of the uterus about the fetus made the version more traumatic than it would have been otherwise. The rupture, if present, was

probably incomplete in that it apparently did not cause any intraperitoneal collection of blood.

RUPTURE DUE TO INSTRUMENTAL DELIVERY

Forceps application and extraction is not done without uterine rupture incidence. I have noted on occasion application of the forceps blade outside the cervix or lower segment of the uterus and have seen lacerations of the cervix that were undoubtedly due to this misplacement. This situation may occur despite full dilatation of the cervix and a plus one or two station. This fact demands that the operator know at all times exactly where the forceps blades are being applied. A misapplication can easily tear the cervix and thus extend into the uterine body. A constriction ring in the uterus may result in a difficult forceps extraction even though the forceps application is good. A stubborn or forceful extraction may result in a tear through this ring and through the lower segment by the shoulders.

Cephalic forceps applications which require wandering of the blades, the classical Kjelland maneuver, and other applications which are likely to result in the forceps blade being manipulated in the lower uterine segment, are all potential causes of uterine rupture.

Case 1.—J. M., a 32-year-old white female, para 5-1-3, was admitted with term pregnancy in active labor. After 11 hours of labor the head crowned and forceps delivery was attempted without success. Kjelland forceps were applied but delivery could not be effected. Soon after this attempt at delivery it was noted that uterine contractions ceased and the presenting part had ascended. The patient went into shock. Diagnosis of uterine rupture was made and a laparotomy was done. A 9 pound 10 ounce stillborn was found free in the abdominal cavity and an anterior uterine rupture was visualized. A subtotal hysterectomy was done. The patient had a very morbid course and later developed a vesico-vaginal fistula.

The size of the baby made outlet extraction difficult if not impossible. The largest diameters of the baby's head had passed the inlet and the mid-plane, thus the major disproportion was in the outlet. A pubiotomy is indicated in cases of this type. Separation of the pubis would have allowed the tuberosities to separate, and thereby extraction would have been easier. If difficulties of this type could be foretold, cesarean section would be the choice of delivery.

DIAGNOSIS OF RUPTURED UTERUS

The rarity of this pathological entity tends to result in its exclusion from the differential diagnosis. The secret to diagnosing rupture of the uterus is to consider it as a definite possibility in every obstetrical complication.

The classical picture of uterine rupture is fairly obvious. A sharp knife-like pain that is associated with the sensation of something giving away in the abdomen is real and dramatic. Varying levels of shock follow this and denote internal hemorrhage. Changes in the shape of the abdomen, absence of fetal heart tones, abdominal tenderness, and a more easily palpated fetus are further confirmations. All gradations of the above signs and symptoms appear clinically, and occasionally the most astute clinician overlooks them.

If the patient has had a long and difficult labor when the rupture occurs, it is usually noted that she feels better after the initial pain, and that the uterine contractions cease. This results from the fetus being squeezed out into the abdominal cavity. There is often some external vaginal bleeding which comes from the laceration in the uterus. Rectal or vaginal examination usually shows that the presenting part has ascended and may be out of digital reach.

The lower abdomen is usually quite tender, and this is most marked over the rent in the uterus. This sign is significantly minimized when the tear is located on the posterior uterine surface.

Rupture following traumatic delivery presents the same clinical features described above, except that the signs become more significant since the patient is usually anesthetized. These ruptures are usually in the lower segment, and finding hematuria should arouse suspicion of a rupture with bladder involvement.

The rupture that develops in an old cesarean section scar or an old laceration scar may be explosive but usually is insidious in development. This clinical type is often called the "quiet" rupture. If the patient is not in labor, she often thinks that labor is beginning and fortunately calls her physician. Not infrequently a painful nodule will appear in the region of the old scar before a large rent has developed and thus provide a

fairly early sign. The old scar usually has fibrotic walls, and bleeding is minimal. Shock is not such a prominent feature in these cases, and diagnosis depends on the following: palpating the rent in the uterus, observing a change in the abdominal contour, failure to hear fetal heart tones in most cases, cessation of uterine contractions, and confirmatory vaginal findings.

TREATMENT

Since rupture of the uterus most frequently occurs through an old cesarean section scar, the first preventive measure is to reduce the cesarean section rate to a necessary minimum. If a cesarean section is indicated, then a low cervical transverse incision should be used insofar as possible. This procedure offers the lowest rupture incidence.

The low transverse cervical section ruptures less frequently than the classical for three fundamental reasons:

1. The healing process is better in the lower cervical segment, because it is not in a state of alternate contraction and relaxation during involution.

2. The stress on the wall of the uterus is not as great in the lower segment as on the contractible fundal portion during the course of subsequent pregnancies.

3. The transverse incision insures the wound being confined to the lower uterine segment and, in addition, exposes the fetal head in such a manner that it may be grasped and extracted with minimal trauma and difficulty.

A low cervical section is not feasible for all cases. The increased blood loss and increased friability of the tissues in cases of low implanted placentae and the difficulty in shoulder delivery in cases of constriction ring formation probably contraindicate the low transverse incision. Cases that demand extreme speed probably should have a classical section.

Intra-uterine manipulative procedures, be they versions, forceps applications, insertions of bags, or stripping of membranes, are always to be done with ease and care. Any intra-uterine manipulation done in cases of placenta praevia, low lying placenta, abruptio placenta, or the like is fraught with danger.

Attempted delivery through an unyielding, undilated cervix, delivery using Duehrssen's incisions in the cervix, and the use of subcutaneous pitocin before the delivery of the baby are all to be condemned.

The progress of labor should be carefully observed in all cases, and prolonged labors given exceptional attention. Each case should be individualized, but no patient allowed to remain in active labor longer than 8 hours without progress. Prolonged, extremely hard uterine contractions that develop into or border on a tetanic uterus should be stopped by anesthesia or operative delivery. Failure to follow these principles ends in very poor fetal results and increases the chance of uterine rupture. The grand multipara who is having a hard labor reminds one of the findings of Delfs and Eastman who report the rupture incidence to be higher in such patients.

After a rupture develops the significant maternal complications are: (1) hemorrhage, (2) infection, and (3) damage to the surrounding tissues, especially the bladder. Unless the rupture is very early or very small, the fetus is ignored and the mother is treated.

Blood should be administered and a laparotomy begun as soon as possible without moving the patient from the delivery room. If the patient is in any degree of shock, type O Rh negative blood with group specific substance added must be started. Typing cross-matching of additional blood can be done while the O Rh negative blood is being administered. If the patient was typed during the antepartum course, then use the specific type with group specific substance added. The Rh factor should be repeated if possible since it takes only a few seconds to do. Plasma or glucose will have to be used in the absence of blood.

While the blood is being obtained, glucose should be started at two sites with number 18 needles. If, due to collapse, peripheral veins are not available, then the femoral should be used. A cut-down on one of the leg veins is a good procedure in cases of peripheral collapse. If the patient is in severe shock, then intra-arterial transfusions are indicated. The radial artery is the one most available for cannulation. The blood has to be pumped in under pressure, and the

mercurial Baumanometer is used for this procedure. It is connected to measure the air pressure on the blood in the bottle, and with the hand pump the pressure can be kept at any desired level. The effectiveness of this transfusion procedure has been proven many times. It has been found that the blood flows retrograde in cases of shock, and thereby the heart contractions become more forceful due to the filling effect. Massive venous pooling is often obviated by this procedure.

While the transfusion is being prepared, oxygen should be administered by the most available method. The laparotomy should be begun as soon as it is feasible, and the type of anesthesia should depend entirely on the condition of the patient. Spinal anesthesia is contraindicated because of the possibility of blood pressure drop. Cyclopropane is a good anesthetic agent but cannot be used if there are any cardiac irregularities. Nitrous oxide and ether are good anesthetic agents and have a wide margin of therapeutic safety. Local anesthesia with 1 per cent novocaine is very desirable when the patient is in poor condition and speed is not the primary consideration. When this agent is supplemented with sodium pentothal after delivery of the baby, it provides a complementary effect.

The laparotomy should be done as early as it is deemed best and a midline sub-umbilical incision used. A subtotal hysterectomy is recommended. If the patient is hemorrhaging, the uterine arteries should be clamped initially. If bleeding is too profuse to visualize the artery, then the internal or the common iliac artery should be pressed against the pelvic wall to reduce blood loss, thereby allowing visualization of the uterine artery. After the bleeding is controlled the patient usually shows immediate improvement, and at this time the damage to the soft tissues of the pelvis can be sought and repaired.

In the event of a rupture in a patient with no living children, some discretion should be used before a hysterectomy is done, especially if the uterine wound is small and clean. The walls of cesarean section scar ruptures are usually clean and avascular and should be resected before suture approximation is attempted. To save a rup-

tured uterus for future pregnancies is indeed daring.

Antibiotic therapy should be begun immediately after rupture as a prophylactic measure. The use of 1,500,000 units of aqueous penicillin every 24 hours is adequate. Aureomycin or chloramphenicol, in addition to penicillin, attacks a much broader field of pathogens. The sulfonamides are not used until the urinary output is established.

Occasionally a ruptured uterus can be repaired from the vagina. If there is any doubt about this approach, a laparotomy should be done.

SUMMARY AND CONCLUSIONS

This is a report of 8 cases of ruptured uteri that were managed at the Jefferson-Hillman Hospital from July 1, 1945 to June 30, 1950. Our incidence rate was 1 to 1273, and our maternal mortality, 25 per cent, with a fetal mortality of 75 per cent.

All of our cases ruptured during labor, 4 were spontaneous and 4 were due to manipulative procedures. Two cases had previous classical cesarean sections; 3 cases ruptured after versions and extractions; and one occurred following forceps manipulation.

To prevent uterine rupture, cesarean sections should be reduced to a necessary minimum, and when possible the low cervical transverse incision should be used. Labor should be interrupted when progress becomes arrested. Versions and extractions should not be done unless all conditions are favorable. Intra-uterine manipulative procedures, in cases where there is a vascular lower segment, are fraught with danger.

Adequate blood, antibiotics, and surgery are the requirements for treating this problem.

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Histoplasmosis must be taken into account in all routine x-ray surveys of population and differentiated from tuberculosis despite superficial similarities. Carefully controlled studies of the etiology of histoplasmosis in relation to conditions that vary geographically are very much needed.—*G. Arnold Cronk, M. D., New York State J. Med., August 15, 1951.*

fection with a suprapubic urinary fistula; and the occupational case had a suprapubic abscess develop after trauma.

The x-ray picture is that of acute bone atrophy, but usually it does not develop until the third week. It consists of an early fuzziness and fraying of the periosteum, then rarefaction with decalcification and separation of the symphysis (the process being at its maximum during the 4 to 6th week). Subsequently there is the appearance of osteophytes and sclerosis, fixation, and a frequent "bridging" across the top of the pubis. Strangely enough, there may be simultaneous healing of rarefied bone with sclerosis while osteolysis is progressing elsewhere. Symptomatic improvement usually begins near the time of appearance of the sclerosis—ordinarily around the 10th week. Prostatic malignancy, with metastasis, and osteomyelitis are the most frequent diagnoses in error.

Although there is a great deal of argument over the actual cause and set of conditions predisposing to the initiation of the disease,

in practically all cases some operative trauma, urine contamination or infection is present. Most of the reported cases had poor healing if a wound was present. Extensive attempts by one investigator to reproduce the syndrome in rabbits by trauma, urine, and infection, and combinations of these three were unsuccessful. Other suggested causes have been trauma to the nutrient vessels in this area, tearing of the false capsule of the prostate, or damage to the obturator nerves, as area anesthesia corresponding to the obturator distribution has been found in several of the cases.

There is also argument as to the pathologic picture, with most studies indicating both acute and chronic inflammatory cells in mild to moderate amounts, rough bone and granulation tissue with periosteal involvement. Cultures have been inconsistent, showing *B. coli*, *Staph. aureus* or *B. proteus*. However, "true" osteomyelitis is unlikely in the face of a lack of sequestra or involucrum formation. Such rapid absorption of the bone would certainly suggest hyperemia, and a



Fig. 1: Case Report 1—Patient H. E. Onset of illness April 10, 1948. Film showing erosion, especially of right pubis and ischium.

much slower process would be expected if the cause were embolization of the obturator arteries with a subsequent avascular necrosis. The general consensus seems to be that this disorder is a type of so-called Sudeck's or acute bone atrophy said to follow irritation or injury to the nerve supply of the involved part.

In view of the benign prognosis, treatment has, reasonably enough, been directed to relief of the excruciating pain and spasm. A host of treatments have been used, usually with equivocal success, each reporter having his own preference. These have included: opiates, Buck's traction or Bradford frame, prostigmin-atropine combinations, deep x-ray, regional anesthesia or nerve root block, and plaster immobilization. Antibiotics seem to have no real effect. X-ray may help the pain, but apparently it does not affect the course of the disease. Some of those using nerve root block state that, although the procedure does relieve the pain, the aftermath of paralysis of the abdominal musculature is worse and of longer duration than the

original disease. Certainly it can be said that in all cases, from what we have seen, a careful search should be made for accumulation of fluid or pus, especially in the space of Retzius, and adequate drainage performed. Also attention is called to the danger of curettage which, performed in one case, produced marked toxemia.

CASE REPORTS

1. Pt. H. E., age 65, colored male, Jefferson-Hillman Hospital. Retropubic prostatectomy 12/31/47. Only complication during operation was the necessity to cut across urethra at its apex due to attachment of prostate. Penrose drain placed around bladder neck. No complications in postoperative course except aspiration of large right hydrocoele of 100 cc. of turbid yellow fluid.

Forty one days postoperatively he was seen in the Outpatient Department complaining of "pain on walking and tenderness over the symphysis pubis." X-ray revealed characteristic changes with complete sclerosis and bridging later.

Treatment was by means of mild medication on an ambulatory basis.

2. Pt. R. C. J., age 66, white male, Highland Baptist Hospital. Two stage prostatectomy 11/23/49 and 12/4/50. Catheter left in place after



Fig. 2: Same case July 2, 1948. Advanced erosion of both right and left pubic arches, both with beginning spurring due to osteophytic development.



Fig. 3: The case on June 20, 1950. Healed arch with bridging.



Fig. 4: Case Report 2—Patient R. C. J. Showing advanced destruction of the pubic arch, bilaterally.

first operation. No complications. Wound not quite healed on discharge on 14th postoperative day after second procedure.

Five to 6 weeks postoperatively, pain and soreness began in the groins, spreading out to medial upper thighs. He described the pain on awkward movement "as though something shot through you." At times he could hardly walk. There was also some radiation across left buttock to back and slightly to left calf. He especially complained of being unable to pick up his feet to put on pants, and notable inability to cross legs. There was constant and gradual spread of pain. Night sweats had been present for 4 weeks after the operation. Coughing occasionally increased pain.

Physical examination revealed a healed suprapubic scar and healed sinus without evident fluid accumulation. The major finding was a marked weakness of the adductor and flexor muscles of the thighs, left more than right. Bilateral, large, easily reducible, indirect herniae with a truss (not pressing on symphysis) were also present. X-rays revealed a wedge-shaped loss of bone on both sides of anterior symphysis pubis. Hospitalized 2/20-3/4/51. Erythrocyte sedimentation rate 40 and 30 mm. per hour (corrected). White blood count 10,000; 9,200; spinal tap negative except protein 60 mgm. %, no cells. Uric acid normal. Minimal temperature and tachycardia for the first week of hospital stay. Treatment consisted of analgesics, tolserol, heat (local and to lumbar area)—both dry and moist; cortisone in diminishing doses over 8 days beginning with 400 mgm. a day; and streptomycin for 7 days. There was definite improvement in the hospital over a 9-day period of treatment.

SUMMARY

In summary, I have tried to bring to your attention a very interesting and specific clinical syndrome which, in the opinion of most investigators, is frequently not diagnosed and the incidence of which seems to be increasing. The signs and symptoms are typical and unmistakable. The pathology is fairly well confirmed as essentially an acute bone atrophy with mild chronic and acute inflammation. The treatment is generally ineffective although moderate relief from pain can be obtained by means of x-ray and nerve block, and in the second case reported here, cortisone and streptomycin, in combination, seemed to lessen the pain and shorten the course.

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PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Case Report by
Benjamin P. Clark, M. D.

This infant was delivered at home and immediately brought into the hospital because of its small size and persistent cyanosis. On admission it was found to weigh 2 pounds and the temperature was 99° F. Breath sounds were good over both lung fields. Cyanosis was marked and the infant was, therefore, immediately placed in an incubator, and oxygen was given continuously. During the seven days that it lived it was fed by gavage, was occasionally given very small amounts of fluid subcutaneously, and had mucus aspirated from the mouth. On the seventh day it died with a terminal temperature elevation of 101° F.

At autopsy the infant was found to have died of a massive intracerebral hemorrhage. The right cerebral hemisphere was filled in its central portion by a mass of fresh, red clot which weighed approximately 25 grams. The brain itself was very soft.

Discussion: This premature infant suffered from one of the most common complications of prematurity. Fifty per cent of all prematures who die and come to autopsy have cerebral hemorrhage. There is no agreement that this condition could have been prevented by the use of such drugs as

"synkamine" either in the mother or in the newborn infant. This case is a common one and is presented here merely as an excuse to discuss the salient features of good care of the premature infant, who is most prone to have intracerebral damage.

There is universal agreement that infants, premature or full term, who are suspected of having brain damage should be given oxygen in high degrees of concentration from immediately after birth until there is no question of their further need for it. The brain tissues are extremely sensitive to low oxygen saturation and the brain damage may produce poor respiratory exchange, so oxygen is needed early and in high concentration. We feel that a minimum of 48 hours in oxygen is indicated.

These infants must be kept warm. They are often in shock or have sustained damage to their heat regulating centers and, therefore, are unable to maintain their body temperature. We believe that the incubator provides the best means of applying this heat, although other means may have to be used in other circumstances. But, whatever the means, the infant must be kept warm and not burned. We have seen infants who were kept too hot by overzealous attendants.

Attendants are also, at times, guilty of overhandling these infants. They should be left alone except for the most essential services. Nursery workers must be carefully taught that they require the most gentle handling, if any, and do not need to be bathed, weighed, fondled or fed during the first 48 hours. And it is a good idea to keep them somewhat dehydrated. In general, we do not believe in the use of subcutaneous fluids in the newborn period because of the immaturity of the newborn kidney, and we feel that these damaged infants, especially, should never be over-hydrated and generally do better if somewhat, although not drastically, dehydrated.

We do not feel that we are in a position to discuss the use of vitamin K preparations other than to say that we usually use them. They may have some value and we shall continue to use them until there is a general agreement that they are valueless.

We feel that sedatives should be used in moderation in these infants. We, of course, do not use opium derivatives but have seen

no ill effects from the judicious use of barbiturates. The usual dose in a full term infant is 15 drops of elixir of phenobarbital every four to six hours. A somewhat smaller dose will usually be sufficient in the premature infant.

It also has seemed advantageous to us to elevate the head of the bed in these infants provided there is not any undue accumulation of mucus in the respiratory tract. We feel that provision of adequate oxygen is more important than elevation of the head in those infants who are having some difficulty maintaining adequate respiratory exchange because of excessive mucus. Six to eight inches of elevation of the head is probably optimal.

There is a great deal of disagreement in regard to the need for one or more spinal punctures. We feel that one puncture, done at the onset, may help to establish the diagnosis of brain damage but that usually such a diagnosis is evident without the puncture. Therapeutic punctures do not seem to be indicated in our hands, and they are certainly in opposition to the gospel of gentleness that we are constantly preaching to our nursery personnel.

We believe that the use of stimulants is to be avoided at all times. So often we have turned over to us an infant who is not only suffering from severe intracranial injury but is also suffering just as much from overstimulation with coramine, metrazol, or like drugs. These infants present an especially difficult problem to handle and have a poor outcome as a rule. It is our firm belief that any infant that is going to live will respond to oxygen, heat and gentleness without chemical stimulation.

The first step towards prevention of occupational tuberculosis (in hospitals) is to uncover every case of communicable tuberculosis among the patients. That requires chest x-ray examination of every patient on admission. Only when both employees and patients have chest x-rays does the hospital break the vicious cycle: infection of personnel by patients with no one being aware that these patients have tuberculosis and infection of patients by the personnel who continue on duty for months before being aware that they themselves are ill with tuberculosis. The prevention of tuberculosis in the personnel is only one of the several reasons for admission chest x-rays. In the interest of the patients, admission chest x-rays should be done.—*Leopold Brahdy, M. D., The Canadian Nurse, November 1951.*

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HONOR TO BE GIVEN DR. ALFRED A. WALKER

The 28th annual meeting of the Alabama State Pediatric Society will be dedicated to Dr. Alfred A. Walker, whom we call the father of pediatrics in the state of Alabama. The meeting will be held in Montgomery on Wednesday, April 16, 1952. The scientific speakers will be Dr. Francis F. Schwentker and Dr. William A. Reilly. Dr. Hughes Kennedy of Birmingham will give the address of tribute to Dr. Walker. All pediatricians and all of Dr. Walker's friends in the medical world are cordially invited to attend this meeting. All correspondence should be addressed to Dr. David B. Monsky, President of the Alabama State Pediatric Society, 732 Adams Avenue, Montgomery, Ala.

THE DIFFERENTIAL DIAGNOSIS OF COMA

"The title of this paper should be termed the differential diagnosis of the comatose patient, for coma is not a medical diagnosis. Coma may be defined as a state of unconsciousness from which the patient cannot be aroused, and, as such, it is a symptom of disordered or altered cerebral activity which may occur from a large variety of unrelated causes and is a terminal manifestation of many illnesses. The differential diagnosis of the comatose patient could involve discussion of most of the clinical entities known to modern medicine and, as a didactic presentation, would offer little of teaching value in the clinical approach to the comatose patient.

"The physiology of coma, like that of sleep, is unknown. Electro-encephalographic studies of the human cortex have revealed that patients in coma exhibit abnormalities similar to, but of greater severity than, those obtained during normal sleep. No characteristic electro-encephalographic differences are observed in coma resulting from various etiologic factors, thus supporting the thesis that coma is a state of altered cerebral function accompanying many pathologic and physiologic conditions.

"The importance of coma as a presenting finding is growing and this for several reasons. In large general hospitals about five per cent of the emergency admissions are patients in coma; in private hospitals, about three per cent. The growing incidence of

coma is ascribable to the following factors: (1) lessening of social inhibitions toward over indulgence in alcohol; (2) the increasing use of automobiles and the resulting congestion of the highways which is reflected in a greater number of and severer automobile accidents; (3) the growing use of phenobarbital and the various derivatives of barbituric acid; (4) suicides; (5) progressive aging of our population, which is accompanied by an increasing incidence of the effects of degenerative diseases, such as cerebrovascular accidents, congestive heart failure, renal insufficiency, diabetic coma, and the like; (6) traumatic conditions, such as are seen in industry, under military conditions, or in the home; (7) the injudicious use of certain sedative drugs; and (8) induced coma, for example, surgical operations. Thus, every physician can expect to encounter the comatose patient in his practice and it is unfortunate that the clinical approach to the comatose patient has not received greater attention in the undergraduate medical curriculum or even in the internship or residency."

The above are the opening paragraphs of the recently published study of Pullen¹ concerning coma. The New Orleans investigator goes on to tell us that "Among emergency admissions, the most common causes of coma as a presenting finding and their relative frequency are: alcoholism, 60 per cent; trauma, 10 to 13 per cent, of which fractured skulls account for about two-thirds and head injuries about one-fifth; cerebral vascular accidents, ten per cent; poisonings, both exogenous and endogenous, five to ten per cent." Pullen here mentions the multitudinous and lesser causes of the comatose state, which for lack of space cannot be included here. He further states that "Effective therapy exists for many of the conditions listed above. Hence the immediate diagnosis of the comatose patient becomes imperative if the estimated mortality of the comatose patient, excluding the common drunk, of greater than 20 per cent is to be lowered. This unfavorable situation is further accentuated by the fact that the diagnostic errors in the comatose patients of the non-alcoholic group is also estimated to approach 20 per cent."

The author goes on to discuss the exami-

nation of comatose patients at some length, but unfortunately this cannot be referred to here. He has certainly rendered a service in calling our attention to the prevalence of coma. It is somewhat surprising to realize that the percentage of diagnostic errors in dealing with comatose patients is high and therefore the treatment not well directed. Very few practitioners indeed can escape dealing with coma. It is certainly incumbent upon the profession to bear in mind the excellent discussion by Pullen and to heed his sound and sensible admonitions.

SOUTHERN STATES AID MEDICAL EDUCATION

The formation of a 14-state compact which disregards state lines in providing aid to education in medicine, dentistry, veterinary medicine and social work is helping to solve professional education problems in the South has been announced.

For medical education alone, 11 states have tossed \$1,091,500 into a common pot in the last year for distribution to eight medical schools, according to William J. McGlothlin of Atlanta, consultant for professional programs, Board of Control for Southern Regional Education.

Mr. McGlothlin was one of the speakers at the 48th annual Congress on Medical Education and Licensure, sponsored by the Council on Medical Education and Hospitals of the American Medical Association.

Of that medical education budget, \$495,500 was allocated by the board for the current scholastic year to cover the education of 363 medical students. The states participating are: Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia.

The schools in the medical program are: Duke University, Durham, N. C.; Emory University, Atlanta; Louisiana State University and Tulane University, New Orleans; Medical College of Alabama, Birmingham; Vanderbilt University and Meharry Medical College, Nashville, and University of Tennessee, Memphis.

Under the compact, the states pay an agreed sum for the education of students accepted by out-of-state schools. In the case

1. Pullen, Roscoe L.: The Differential Diagnosis of Coma, *South. M. J.* 44: 921 (Oct.) 1951.

of Meharry Medical College, an institution for Negroes which was facing closing, the funds have helped the school to survive and to raise the quality of its program, Mr. McGlothlin said.

"States also have received substantial benefits from the program," he added. "They have been able to assure places for their students who are qualified for admission. Mississippi, which is conducting a two-year medical school, decided to admit two classes each year and thereby double its output. The contracts made it possible for Mississippi to find places for this increased output with no difficulty.

"Florida's governor has been so pleased with the arrangement that he stated: 'This is the greatest bargain since manna fell on the children of Israel.' The program may not be quite such a miracle as the governor's statement suggests, but many requirements of Florida students for medical training have been met."

Florida, he pointed out, has no medical school of its own and its students had been having difficulty in obtaining admissions to medical schools outside of the state.

There has been a steady increase in enrollments of medical students under the regional program, Mr. McGlothlin said. In the 1949-50 scholastic year, there were 151 participants. This was raised to 232 the following year. The estimate for the current year is 363.

Of the money received by institutions for medical education under the program, \$510,750 has gone to Meharry Medical College, \$174,000 to Emory University, \$146,500 to the University of Tennessee and \$123,000 to Tulane University.

This has helped the schools to meet increasing costs, he said, adding:

"Some modifications in admissions have occurred also. Meharry Medical College has given preference to students from the Southern States. Meharry officials feared the effects of such a change, but they have been pleasantly surprised at the quality of students enrolled.

"Possibly better qualified candidates have been encouraged to apply by the establishment of a quota of students from a particular state. At Tulane, the quality of student

from Florida has increased since the contract was established to the point that Tulane now takes from Florida almost double the number of students in the Florida quota."

Mr. McGlothlin said that thus far the habit and understanding of joint effort has been largely limited to expanding the base of support for professional schools. The hope, he said, is to work further toward joint programs in instruction and research.

The Southern Regional Education Board under its 14-state compact guides a program affecting 850 professional students in various fields attending 19 public and private universities. The board itself brings together educational and political leaders to help institutions plan programs of benefit to the region in ways that transcend state lines.

CORRESPONDENCE

Editor, The Journal of
The Medical Association of the State of Alabama
537 Dexter Avenue
Montgomery, Alabama

Dear Sir:

I have recently had occasion to see several patients with advanced degeneration of the spinal cord associated with pernicious anemia. The anemia had been obscured as the result of the patients taking oral preparations containing small amounts of folic acid. For this reason the easily recognizable syndrome of posterolateral sclerosis with advanced pernicious anemia was not present and specific treatment with parenteral vitamin B-12 was not given. There have been several reports in literature citing similar cases. As folic acid (due to its possible action as a growth promoting substance) is now included in many multivitamin preparations which can be bought by patients over the counter, or which may be prescribed in a more or less routine fashion by physicians, a dangerous situation exists. It is generally admitted that oral preparations of vitamin B-12 and liver should not be used in pernicious anemia where there are spinal cord changes, and it has been repeatedly shown that the neurologic changes may progress while the blood picture is improved by the administration of folic acid.

I suggest that this letter be published in the Journal for the information of the physicians of Alabama.

Sincerely,
Samuel C. Little, M. D.

Birmingham, Ala.

**PROGRAM OF THE ANNUAL SESSION
OF THE
MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
MONTGOMERY
APRIL 17, 18, 19, 1952
WHITLEY HOTEL**

GENERAL INFORMATION

All sessions of the Association will be at the Whitley Hotel, convention headquarters.

The maximum time consumed by essayists must not exceed fifteen minutes. This time limit, however, does not apply to invited guests. It is suggested that the salient features of papers be presented within this time, reserving the complete elaboration for publication in the Journal of the Association.

All papers read before the Association must be deposited with the Secretary when read; otherwise, they will not be published.

Papers will be called in the order in which they appear on the program. Should the reader be absent when called, his paper will be passed, and called again when the program is concluded.

THE FIFTY YEAR CLUB

According to custom, physicians who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

HOST TO THE ASSOCIATION

The Montgomery County Medical Society

OFFICERS

Karl B. Benkwith, *President*

B. Franklin Jackson, Jr., *Vice-President*

D. B. Monsky, *Secretary*

W. P. May, *Treasurer*

BOARD OF CENSORS

F. M. Thigpen, *Chairman*

J. W. Davis, Jr. F. W. Riggs

J. Mac Barnes L. L. Hill, Jr.

COMMITTEES

Hotels

J. W. Davis, Jr., *Chairman*

A. E. Thomas F. W. Riggs

J. Cobb Laslie W. W. Wilkerson

Commercial Exhibits

L. R. Gayden, *Chairman*

Entertainment

A. E. Thomas, *Chairman*

W. R. Britton Truett Jackson

John A. Martin

OFFICERS OF THE ASSOCIATION

President

T. Brannon Hubbard..... Montgomery

Vice-Presidents

J. G. Daves..... Cullman

A. J. Treherne..... Atmore

J. O. Finney..... Gadsden

S. W. Windham..... Dothan

Secretary-Treasurer

Douglas L. Cannon..... Montgomery

Director of Public Relations

Mr. W. A. Dozier, Jr..... Montgomery

The State Board of Censors

E. V. Caldwell, Chairman..... Huntsville

J. O. Morgan..... Gadsden

John W. Simpson..... Birmingham

C. E. Abbott..... Tuscaloosa

French Craddock..... Sylacauga

John L. Branch..... Montgomery

E. G. Givhan, Jr..... Birmingham

J. D. Perdue..... Mobile

Robert Parker..... Montgomery

J. Paul Jones..... Camden

State Health Officer

D. G. Gill..... Montgomery

Delegates and Alternates to the American

Medical Association

Delegate—C. A. Grote..... Huntsville

Alternate—G. A. Denison..... Birmingham

(Term: January 1, 1951-December 31, 1952)

Delegate—J. Paul Jones..... Camden

Alternate—D. G. Gill..... Montgomery

(Term: January 1, 1952-December 31, 1953)

PROGRAM**First Day, Thursday, April 17th**

Blue and Gray Room

Whitley Hotel

Morning Session

9:00 A. M.

Call to order by the President—

T. Brannon Hubbard, Montgomery.

Invocation—

*Donald C. MacGuire, D. D., Pastor, First
Presbyterian Church, Montgomery.*

Address of Welcome—

Hon. W. A. Gayle, Mayor of Montgomery.

Address of Welcome—

*Karl B. Benkwith, President,
Montgomery County Medical Society.***PART I****REPORTS OF STANDING COMMITTEES**

1. Prevention of Blindness and Deafness—
Alston Callahan, Chairman.
Gilbert E. Fisher, Co-Chairman.
2. Mental Hygiene—
Jack Jarvis, Chairman.
3. Maternal and Child Health—
Tom Boulware, Chairman.
4. Physician-Druggist Relationships—
W. M. Salter, Chairman.
5. Anesthesiology—
Alfred Habeeb, Chairman.
6. Postgraduate Study—
Ralph McBurney, Chairman.
7. Cancer Control—
John Day Peake, Chairman.
(b) American Society, Alabama Division—
*Mrs. Lillian G. Meade, State Com-
mander.*
8. Tuberculosis—
Paul W. Auston, Chairman.
9. Medical Service and Public Relations—
E. G. Givhan, Chairman.
10. Industrial Medicine—
D. O. Wright, Chairman.

REPORTS OF SPECIAL COMMITTEES

1. Nurse Recruitment—
A. D. Henderson, Chairman.
2. On Voluntary Insurance Plans—
J. R. Garber, Chairman.

Report of the Secretary-Treasurer—
*Douglas L. Cannon, Montgomery.*Report of the Committee of Publication—
Douglas L. Cannon, Chairman.

Reports of Vice-Presidents—

- (1) Northwestern Division
J. G. Daves, Cullman.

- (2) Southwestern Division
A. J. Treherne, Atmore.

- (3) Northeastern Division
J. O. Finney, Gadsden.

- (4) Southeastern Division
S. W. Windham, Dothan.

Report from Woman's Auxiliary—
*Mrs. Fred Reynolds, President.*Report from X-Ray Technicians Society—
Mr. W. M. Bowen, President.

Message of the President—

*T. Brannon Hubbard, Montgomery.***PART II****SCIENTIFIC PROGRAM**

1. *Culdoscopic Examination of the Female Pel-
vis—*
BUFORD WORD,
Birmingham, Alabama.
2. *Macrocytic Anemia—*
JOHN B. YOUNG,
*Dean, Vanderbilt University School of Medi-
cine, Nashville, Tenn.*
3. *Coin Lesions of the Lung—*
E. L. McCAFFERTY, JR.,
Mobile, Alabama.
4. *Pediatric Neurologic Conditions and Their
Surgical Management—*
DONALD B. SWEENEY,
Birmingham, Alabama.

**Afternoon Session****Thursday, April 17th**

2:00 P. M.

1. *The Use of the Bone Bank—*
S. RALPH TERHUNE,
Birmingham, Alabama.
2. *X-Rays for Backache—*
HUGH F. HARE,
Lahey Clinic,
Boston, Mass.
3. *The Modern Therapy of Rheumatic Fever—*
FRANCIS F. SCHWENTKER,
Johns Hopkins Hospital,
Baltimore, Md.
4. *Cardiac Catheterization and Diagnosis of Con-
genital Heart Disease—*
RICHARD J. BING,
Medical College of Alabama,
Birmingham, Alabama.
5. *Management of Fractured Hips in Small Hos-
pitals—*
R. C. BIBB,
Huntsville, Alabama.
6. *The Treatment of Endocervicitis—*
W. F. HARPER,
Selma, Alabama.

Second Day, Friday, April 18th

Morning Session

9:00 A. M.

1. *Care of Post-Menopausal Patients*—
FRANKLIN PAYNE,
University of Pennsylvania School of Medicine, Philadelphia.
2. *Plastic Surgery of the Renal Pelvis*—
ROBERT B. McIVER,
Jacksonville, Florida.
3. *Medical and Surgical Therapy of Birth Hemorrhage*—
EDWARD WATERS,
Jersey City, N. J.
4. The Jerome Cochran Lecture
Carcinoma of the Colon and Rectum—
RICHARD CATTELL,
Lahey Clinic,
Boston, Mass.
5. Recognition of the Fifty-Year Club.
6. Presentation of Past Presidents' Pins.
7. Announcement of Vacancies in the College of Counsellors.
8. Meeting of Counsellors and Delegates for the Purpose of Making Nominations to Fill the Vacancies in the College of Counsellors.



Afternoon Session

Friday, April 18th

2:00 P. M.

1. *Medullary Fixation of Fractures of Long Bones*—
JAMES S. DUBOIS,
Enterprise, Alabama.
2. *Management of Cancer in the Neck*—
JAMES E. SCARBOROUGH, JR.,
Emory University School of Medicine,
Atlanta, Georgia.
3. *Greetings*—
MRS. HAROLD F. WAHLQUIST,
President, Woman's Auxiliary,
American Medical Association,
Minneapolis, Minn.
4. *Interpretation of Palpitation*—
TINSLEY HARRISON,
Medical College of Alabama,
Birmingham, Alabama.
5. *Prognosis and Trend of Amebiasis*—
WILLIAM H. TUCKER,
Mobile, Alabama.
6. *Present Concepts of Rehabilitation of Tuberculous Patients*—
ROBERT K. OLIVER,
Montgomery, Alabama
7. *The Duodenum Below the Cap*—
E. M. MOORE, JR.,
Montgomery, Alabama.

Last Day, Saturday, April 19th

9:00 A. M.

Business meeting of the Association sitting as the Board of Health of the State of Alabama:

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls;
- (3) Election and Installation of Officers.

THE FIFTY YEAR CLUB

Class of 1952

(To whom Certificates of Distinction will be awarded on Friday morning at the conclusion of the Jerome Cochran Lecture.)

Carraway, C. N.	Kirk, A. T.
Crelly, H. C.	McIntosh, E. L.
Crook, W. R.	Murphree, C. L.
Godbold, P. E.	Ralls, A. W.
Harris, A. B.	Shepherd, S. T.
Herrin, C. E.	Teaford, B. J.
	Wilkerson, L. B.

**THE ASSOCIATION'S LIVING PAST
PRESIDENTS**

(To whom past presidents' pins will be presented at the conclusion of the Jerome Cochran Lecture on Friday morning.)

Robert Somerville Hill	1914
William Dempsey Partlow	1918
James Somerville McLester	1920
Joseph Davis Heacock	1925
Edwin Valdivia Caldwell	1929
William Groce Harrison	1931
Toulmin Gaines	1932
James R. Garber	1934
Charles A. Thigpen	1936
Edward Simmons Sledge	1938
Seale Harris	1939
James Monroe Mason	1942
Harvey B. Searcy	1943
Walter F. Scott	1946
Carl A. Grote	1947
Jesse P. Chapman, Sr.	1948
J. Paul Jones	1949
Frank C. Wilson	1950
Joseph M. Weldon	1951

**VACANCIES IN THE COLLEGE OF
COUNSELLORS**

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

4th Congressional District—2. French H. Craddock is to be elevated to Life Counsellor; the second term of seven years of Jerre Watson has expired.

6th Congressional District—1. The second term of seven years of C. E. Abbott has expired.

7th Congressional District—1. J. G. Daves' second term of seven years has expired.

8th Congressional District—1. H. M. Simpson's second term of seven years has expired.

9th Congressional District—1. J. R. Garber is to be elevated to Life Counsellor.

Counsellors and delegates in attendance from these districts will assemble at the conclusion of the morning session on Friday, April 18, at places in the Whitley Hotel, designated by the President and announced by the Secretary, for the purpose of making nominations to fill these vacancies.

PROGRAM

Alabama Association of Obstetricians and Gynecologists

Saturday, April 19, 1952

Whitley Hotel

10:00-10:30 a.m. Short Business Meeting

10:30-11:30 a.m.

CONTROVERSIES, FACTS AND DETECTION OF PRE-INVASIVE CARCINOMA OF THE CERVIX UTERI.

H. E. Nieburgs, M. D., Augusta;

Professor and Director, Department of Clinical Cytology, Medical College of Georgia.

11:30-12:30 p.m.

CONSERVATION OF THE UTERUS FOR NON-MALIGNANT PATHOLOGY.

E. G. Waters, M. D., F. A. C. S., Jersey City; Division Chief, Margaret Hague Maternity Hospital; Assistant Clinical Professor, Obstetrics and Gynecology, Columbia University.

Lunch

2:00- 3:00 p.m.

FUNCTIONAL DISORDERS IN WOMEN AND THE DIAGNOSTIC VALUE OF VAGINAL SMEARS.

H. E. Nieburgs, M. D.

3:00- 4:00 p.m.

SELECTION OF OPERATION FOR GENITAL PROLAPSE.

E. G. Waters, M. D., F. A. C. S.

4:00- 5:00 p.m.

THE ROLE OF RADIATION AND OF SURGERY IN THE TREATMENT OF CERVICAL CARCINOMA.

Franklin L. Payne, M. D., Philadelphia; Professor, Gynecology and Obstetrics, University of Pennsylvania.

6:00- 7:00 p.m. Cocktail Hour

7:00- 8:00 p.m. Banquet

8:00 p.m.

CERVICAL OBSTRUCTION—ITS ETIOLOGY AND CLINICAL SIGNIFICANCE.

Franklin L. Payne, M. D.

PROGRAM OF THE WOMAN'S AUXILIARY TO THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

Jefferson Davis Hotel

April 17, 18, 1952

President

Mrs. Fred D. Reynolds..... Montgomery

President-Elect

Mrs. J. O. Morgan..... Gadsden

Vice-Presidents

Mrs. H. L. Rosen..... Montgomery

Mrs. Mercer Rowe..... Gadsden

Mrs. Loren Gary, Jr..... Tusculumbia

Mrs. M. J. Roberts..... Mobile

Recording Secretary

Mrs. Frank Riggs..... Montgomery

Corresponding Secretary

Mrs. William Smith..... Montgomery

Treasurer

Mrs. J. H. Knight..... Birmingham

Auditor

Mrs. J. R. Chandler..... Bessemer

Finance Officer

Mrs. W. F. Jordan..... Huntsville

Historian

Mrs. John Chenault..... Decatur

Parliamentarian

Mrs. G. G. Woodruff..... Anniston

Counsellor to Southern Medical

Mrs. J. R. Horn..... Bessemer

COMMITTEE CHAIRMEN

Archives and Exhibits

Mrs. George Perry..... Brewton

Bulletin

Mrs. James DuBois..... Enterprise

Civilian Defense

Mrs. J. R. Williams..... Selma

Doctors' Day

Mrs. J. C. Chambliss..... Cullman

Jane Todd Crawford Memorial

Mrs. H. L. Rogers..... Albertville

Legislation

Mrs. Donald Sweeney..... Birmingham

Lettie Daffin Perdue Fund

Mrs. Edward Sledge..... Mobile

Members-at-Large

Mrs. E. F. Leatherwood Hayneville

Memorial

Mrs. Julian Howell Selma

Nominating

Mrs. Gordon Daves Cullman

Organization

Mrs. J. O. Morgan Gadsden

Press and Publicity

Mrs. D. B. Faust Montgomery

Program

Mrs. R. E. Tyler Birmingham

Public Relations

Mrs. H. L. Anderson Huntsville

Radio

Mrs. J. Mac Bell Mobile

Research in Romance of Medicine

Mrs. A. D. Henderson Mobile

Revisions

Mrs. N. T. Davie Anniston

Social

Mrs. Irl Long Montgomery

Today's Health

Mrs. William Rosser Birmingham

Year Book

Mrs. E. F. Leatherwood Hayneville

Wamasa News (News Letter)

Mrs. William Brannon Montgomery



Thursday, April 17

9 to 12

Registration

10:30 to 12:00

Preconvention Executive Board Meeting—Mrs. Fred Reynolds, Presiding.

12:30 to 2:00

Dutch Luncheons

1. Civilian Defense—Chairmen of State and County Committees

Mrs. J. R. Williams, State Chairman, Presiding.
Speaker: Col. J. M. Garrett, Jr., State Director of Civilian Defense.

2. Luncheon honoring Mrs. Harold F. Wahlquist, President, Woman's Auxiliary to the American Medical Association, Minneapolis, Minn., and Mrs. V. Eugene Holcombe, President, Woman's Auxiliary to the Southern Medical Association, Charleston, W. Va.

Mrs. Fred Reynolds

Presiding

Speaker: Mrs. V. Eugene Holcombe.

2:30 to 4:30

CONVENTION PROGRAM

Call to Order—Mrs. Fred D. Reynolds, President, Montgomery.

Invocation—Mrs. E. F. Leatherwood, Hayneville.

Welcome Address—Mrs. Frank Riggs, Montgomery.

Response—Mrs. Mercer Rowe, Gadsden.

Memorial Service—Mrs. Julian P. Howell, Selma.

Message—Dr. Douglas L. Cannon.

Address—Mr. W. A. Dozier, Director of Public Relations, State Medical Association.

Convention Chairman: Rules of Order—Mrs. William Smith, Montgomery.

Credentials Chairman—Mrs. Sam Smith, Montgomery.

Reading of the Minutes—Mrs. Frank Riggs, Montgomery.

Annual Reports of Officers.

Presentation of Mrs. Harold F. Wahlquist, President, Woman's Auxiliary to the American Medical Association, Minneapolis, Minn.; and Mrs. V. Eugene Holcombe, President, Woman's Auxiliary, Southern Medical Association, Charleston, W. Va.

Annual Reports of Standing Committees.



Friday, April 18

9:30 A. M.

Call to Order—Mrs. Fred D. Reynolds, Montgomery.

Invocation—Mrs. J. R. Horn, Bessemer.

Civilian Defense—Mrs. J. R. Williams, Selma.

Revisions—Mrs. N. T. Davie, Anniston.

Annual Reports of County Presidents:

Baldwin—Mrs. Norman Van Wezel, Foley.

Calhoun—Mrs. James Francis, Anniston.

Coffee—Mrs. J. M. Kimmey, Elba.

Colbert—Mrs. D. J. O'Brien, Sheffield.

Covington—Mrs. L. L. Parker, Andalusia.

Cullman—Mrs. Thomas Beatty, Cullman.

Dallas—Mrs. J. S. Pilkington, Selma.

DeKalb—Mrs. R. J. Guest, Jr., Ft. Payne.

Escambia—Mrs. George Perry, Brewton.

Etowah—Mrs. Jack Brock, Gadsden.

Jefferson—Mrs. C. W. Ramey, McCalla.

Mrs. J. F. Jenkins, Jr., Birmingham.

Madison—Mrs. E. E. Camp, Huntsville.

Marshall—Mrs. J. M. Crawford, Arab.

Mobile—Mrs. G. W. Newburn, Jr., Mobile.

Montgomery—Mrs. Frank Riggs, Montgomery.

Morgan—Mrs. E. M. Chenault, Decatur.

Pike—Mrs. T. D. Cowles, Troy.

Talladega—Mrs. Robert Winslow, Sylacauga.

Sumter—Mrs. Horace Hunt, Livingston.

Tuscaloosa—Mrs. Norman Reim, Tuscaloosa.

Walker—Mrs. B. E. Donaldson, Carbon Hill.

Report of Social Committee—Mrs. Irl Long, Montgomery.
 Report of Registration Committee—Mrs. Dan Hagood, Montgomery.
 New Business.
 Report of Nominating Committee—Mrs. J. G. Daves, Cullman.
 Election of Officers.
 Installation of Officers—Mrs. Harold F. Wahlquist.
 Election of Nominating Committee.

Friday, April 18

12:30 P. M.

Jefferson Davis Hotel

Mrs. Frank Riggs, Presiding

Invocation—Rev. Henry Edward Russell, Montgomery.

Greetings—Mrs. Riggs.

Response—Mrs. C. R. Putzel, Selma.

Introduction of Guests and New Officers.

Introduction of New State Committee Chairmen—Mrs. J. O. Morgan, President.

History—Mrs. John Chenault, Decatur.

Address—Mrs. Harold F. Wahlquist.

Introduction of Committee Chairmen:

Credentials—Mrs. Sam Smith.

Registration—Mrs. Dan Hagood.
 Social—Mrs. Irl Long.
 Press and Publicity—Mrs. D. B. Faust.
 Convention Chairman—Mrs. William Smith.

Adjournment



Special Rules of the Auxiliary Convention

1. All persons appearing on program must be seated in reserved section at front of room.
2. Badges must be worn by members of the voting body at all sessions of the convention.
3. When addressing the chair, the speaker shall stand, announce her name and home address.
4. Unless notified to the contrary each speaker shall be limited to (2) two minutes.
5. A timekeeper shall notify each speaker when time is up.
6. All motions must be in writing, signed by the mover and presented to Convention Chairman.
7. No report shall be read except by the person making the report, or a delegate appointed by her.
8. All visitors are welcome at all sessions of convention, but shall sit in section reserved for them.
9. All visitors are requested to register.
10. Order must be maintained at all times.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WE HOPE IT IS INDICATIVE

W. A. Dozier, Jr.

Director of Public Relations

Before getting into a statement of possible indications and possible faults to be found, it should be pointed out that the title of the article is purposely worded as it is. We do hope it is indicative.

A two-column story head on the front page of the Montgomery Advertiser-Alabama Journal for Sunday, February 3 states "Truman Medical Care Proposal Opposed by Majority in Poll." This newspaper has been running a series of polls in the form of opinion letters. These letters are addressed to various people, in the present instance to Senators Hill and Sparkman; and they allow anyone who answers a selection of statements they can make to the addressee. In this poll the answering person could check:

(1) "There is nothing wrong with the present system; medical attention is available free of charge to those in poor financial circumstances. You should turn down the President's program and any other such plan that tampers with free enterprise and the high standards of the medical profession." (2) "Proper medical attention is too costly, but the President's program is socialistic. Another program should be developed that will lower medical costs, and at the same time will be in keeping with free enterprise and high medical standards." (3) "You should put the President's national health insurance program into law. Proper medical attention is too costly for the majority of the American people."

According to the report in the Advertiser-Journal sixty-two per cent of the answers favored statement one above, twenty-three

per cent favored number two, while only twelve per cent checked number three. The remaining three per cent offered other opinions or a combination of the three above.

Now let us look at a few things one would need to know before evaluating the above figures. How many returns were there? What economic, professional, or social groups were represented? What sort of coverage does this newspaper get? What could be known about the group who took the trouble to clip the letter from the paper, answer it, and return it to the home office? All these and many other things force us to say "we hope" the poll is indicative.

There were other things that might be of more value. For example, cost seems to be the factor played up in opposition to socialism. Have we, then, failed to show the people that socialism is too costly? Through, and perhaps because of the statement of the possible answers, which is in itself indicative, the additional remarks made by those answering the poll seem in most instances to harp upon the cost factor. One who opposed the President's plan also stated, "Doctors should lower their fees. All medical services and medicines are too costly. Negroes (especially) have a hard time."

Some of the answers must also be looked at in the light of personalities brought into play. Some of the remarks point to a definite prejudice against the administration with little concern for the question being posed. This, of course, is a part of the complete picture but must at the same time be considered in its bearing on the main question.

One answer from a person not of a medical family said, "It is better to leave well enough alone. The cost of proper medical care is no higher in proportion to the cost of food, clothing and shelter."

Admitting the weaknesses and the strength of this type poll, one must also realize that anyone who will trouble to clip and return an opinion letter must feel pretty strongly on the matter. If so, they are probably the ones who would talk for or against and who would be willing to go to bat for their convictions. Therefore it is perhaps all right to hope that there is some indication of people's feelings.

This poll also seems to point out a field or two in which medical public relations must continue to operate—and operate at a greater efficiency and effectiveness. Part of our message has not yet taken hold with a rather large segment.

Women in Medicine—Some people may think the woman's place is in the home. But, two San Francisco doctors—of the fair sex, of course—think she also has a definite place in medicine.

And, to prove their theory, Drs. Hulda E. Thelander and Helen B. Weyrauch have conducted a study of 230 women physicians, 74 of whom are single and 156 married. The results of their survey appeared in the February 16 Journal of the American Medical Association.

Although the woman doctor has more problems to face than her male counterpart, she "works hard at being a good physician, and, by the selected standards, has succeeded," according to the doctors. The married professional woman, especially, has to deal with problems outside the sphere of either the male or the unmarried professional woman, they pointed out.

"The married woman has two jobs, but the primary one should be the maintenance of a family unit and the rearing of the young," the doctors said. "The woman is the integral part in homemaking. No matter how great recognition a professional married woman attains, she will not be considered a success if she has failed in her home."

The problems peculiar to the married woman doctor include the fact that she does not select her location, but follows her husband, creating her opportunities from the environment in which she finds herself, the survey disclosed. In addition, the bearing of the child and the nurturing of it through early infancy takes energy, devotion, and time which must be subtracted from a career.

Other problems are obtaining competent household help, maintaining contact with the medical field during periods of home responsibility, and of refreshing knowledge after the homework has diminished.

Statistics have shown that women constitute over half of the population. Because women physicians are more concerned with the problems of their own sex than are men physicians, Drs. Thelander and Weyrauch believe women physicians can make special contributions to medicine just because they are women.

"In fact," they said, "all of medicine might gain materially from a feminine as well as a masculine point of view."

The survey showed that women physicians seek and obtain good medical training. In addition, they participate in teaching and research. However, the medical and scientific achievements of the single women doctors far exceed those of the married ones.

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

JEFFERSON DAVIS' FRIEND IN NEED

In May 1865, a tall, gaunt, defeated man, with, however, the courtly manners of a Southern gentleman, was carried under heavy guard to Fort Monroe, Virginia. After four years of heroic struggle against overwhelming odds, the Confederate States of America, born at the head of Montgomery's Dexter Avenue, had fallen to pieces. Its armies, overrun by vastly more powerful enemy forces and bled by economic collapse, had virtually ceased to exist. And Jefferson Davis, who had taken the oath of office so hopefully in Alabama's capital city those few short years before, was now a prisoner, helpless in the hands of his enemies.

War does strange things to men's minds. One of the strange things four years of the War Between the States had done to minds north of the Mason-Dixon Line was to make Jefferson Davis one of the most cordially hated men of his age.

"The Confederate President was execrated and feared by his captors even more than Napoleon had been in 1815," Dr. Chester D. Bradley wrote of that moment of humiliation for the South's captive idol. That author continued in an article published in the *Virginia Medical Monthly*:

"Many of Davis' foes hoped that Fort Monroe would be his 'living tomb' as St. Helena had been that of Bonaparte. Fort Monroe, the mightiest fortification in the Western Hemisphere in 1865, was considered the only secure place for the indomitable Jefferson Davis. It is situated at the very tip of Old Point Comfort, a narrow strip of sandy soil projecting about two miles out into Chesapeake Bay. Its thick granite walls rise 35 feet above a water-filled moat which ranges 75 to 100 feet in width and surrounds the fort in its entirety. The fort has three gates, or sallyports, which are approached by bridges over the moat like a medieval castle. Designed by one of Napoleon's mar-

shals in exile (Simon Bernard), Fort Monroe was built to accommodate 412 cannons. Not all of these guns had been mounted, however, and some of the gun rooms (casemates) in the walls of the Fort had long been used as living quarters. It was in a casement of the second front of the fort that Jefferson Davis was held in solitary confinement for four and a half months (May 22 to October 2, 1865)."

That was indeed a tragic plight for the proud President of a proud but no longer existent nation. Mr. Davis was made to feel his humiliation and defeat constantly. Those charged with preventing his escape appear to have been chosen with an eye to harshness. With every breath he took he had it burned into his sensitive spirit that he was indeed at the mercy of those who hated him.

But he found a friend. At least one of the many men who lived and worked around him felt a sympathy for the prisoner. The others may have been, and presumably had been, embittered by the poisons of war. But not Dr. John J. Craven, the physician assigned to Mr. Davis, although he had been a medical officer of the Federal Army since soon after that tragic first shot was fired at Fort Sumter.

Those who knew Jefferson Davis have remarked many times upon his vast capacity for making enduring friendships. He appears to have been wonderfully gifted with the power of making people like him. Even those who differed with him strongly and militantly on vital issues usually had a great respect for the man personally, if they knew him well personally. There was something about him that instinctively surrounded him with an aura of kindness. Dr. Craven was not the first or the last associate of Jefferson Davis to fall under his spell.

The one-time New Jersey physician was not satisfied to admire the former president. He developed a strong desire to do everything he could to make his lot easier. It was fortunate that he was able to do a great deal.

One service which Dr. Craven was able to

perform gave Davis* a considerably greater measure of personal freedom than he had enjoyed before. The Yankee doctor could not see the wisdom or indeed the humanity of keeping an elderly man cooped up in a small room, built not for human habitation but as a gun emplacement. So he undertook a personal appeal to his official superiors in the ex-President's behalf. He was finally successful too. For, early in October 1865, the prisoner was removed to Carroll Hall. This was a two-story structure of brick. Things were much more comfortable from then on until Davis' liberation at the end of his two-year imprisonment.

There has been considerable controversy regarding a particularly burning humiliation to which the former Confederacy's President is said to have been subjected. That was the placing of shackles upon him. Apparently, there is no serious doubt as to its having occurred. It was on May 23, 1865, according to Dr. Bradley. Dr. Craven was not assigned to duty as Davis' physician until the next day. So he was not present when that embittering experience was inflicted. But he wrote later that he had talked with those who had seen those cruel symbols of infamy applied. So greatly was his sense of justice and humanity inflamed that he went to General Nelson A. Miles, commander of the fort, and pleaded with him to remove them. There is some question as to how effective his pleading actually was. The shackles were removed on May 28, three days after Dr. Craven made his plea. On the face of it, we might feel justified in assuming that that plea had been responsible. But it has since been revealed that General Miles received a telegram on May 28—the day the shackles were removed—from the Secretary of War ordering him to remove them. Since the Secretary of War was the general's official superior, it may be presumed that the telegram, and not the doctor's earnest pleas, had been the decisive influence. But we Southerners can appreciate and be grateful for that Yankee doctor's efforts. His heart was certainly in the right place.

There is no doubt about his having been responsible for other changes that made Davis' long imprisonment somewhat more endurable. There were many ways in which the stern regimen could be relaxed. And

Dr. Craven never missed an opportunity to point them out.

Unfortunately, this kindness was too good to last. Those special acts of consideration began to draw critical comments from others who were not willing to spare a defeated soldier-statesman any of the bitter dregs of defeat. They objected to outcroppings of common humanity across recently erased battle lines. So Dr. Craven soon found himself "in the dog house," as we would say in these later, slangy days. He was charged with being too "soft." He had become too friendly with his patient, it was claimed. So Jefferson Davis and Dr. John J. Craven parted company. The latter was removed from Fort Monroe in December, after about seven months as guardian of the former President's health.

In his article in the *Virginia Medical Monthly*, already mentioned, Dr. Bradley tells us more about Dr. Craven. Although to us Alabamians his helpfulness to Jefferson Davis is of the most interest, he would have been an unusual and even remarkable man had he and the Confederacy's Chief Executive never met.

The future Dr. Craven was born in Newark, New Jersey, on September 8, 1822, to parents who had long known the heavy hand of extreme poverty. In those days poverty was an almost insurmountable barrier to an education, and young John seemed destined to virtual, if not complete, illiteracy. But he was a close observer. He also had a consuming hunger for the knowledge that comes from books. Working as a carpenter's apprentice, he had a part in the building of the Passaic Chemical Works. After its completion he took on the job of superintendent of construction and repairs.

Samuel F. B. Morse's telegraph was attracting considerable attention about that time, and much interest was aroused in the construction of a telegraph line which, it was hoped, would eventually link New York and Washington with the magic of instantaneous communication. Here was a vast new industry. It appealed strongly to the young man from Newark and Passaic. So he quit his job with the Passaic Chemical Works to take one with the Magnetic Telegraph Company, then engaged in stretching wires across the state of New Jersey.

That task was hampered by numerous difficulties. Conspicuous among them was that of getting the lines across large bodies of water. It was a relatively simple matter to stretch them between poles placed on both sides of small streams. But bare wires could not be used under streams. Some form of insulation had to be employed. And no insulating material then known had proved satisfactory. The acids and other products in the water soon destroyed the coverings. John Craven began wondering if he could not find or devise a substance that would resist those destructive forces.

He soon became interested in a recently developed product known as gutta-percha, made from the gum of a tree grown in Malaya. Perhaps, he thought, it would provide for underwater wires the protection they needed. He determined to find out.

Tests showed that it would. Covering a copper wire with it, he was delighted to find that the new product did exactly what he wanted it to do. Working under authority of his official superiors, he placed a gutta-percha-covered wire across the Passaic River, dropping it gently on the river bottom. After being connected at both ends with land wires, one running to Jersey City and Washington and the other to New York City, he closed the final short but baffling link of telegraphic communication between the nation's capital and its largest city. Unfortunately, his triumph was not permanent. For his submarine cable was ripped apart a few days later by a ship's anchor. Too, the Patent Office turned him down when he applied for a patent on this new process, basing its rejection upon a technicality. He was naturally greatly disappointed. But he at least had won a moral victory. He knew that he had made a valuable contribution to rapid communication, even though he could not exercise exclusive rights to the discovery.

After a trip around Cape Horn to California, where he hoped to strike it rich as a gold miner, he returned to the East, without the fortune he had gone to seek. It was then that he decided to become a doctor. In the tradition of his day, he studied under an older doctor. He also attended the College of Physicians and Surgeons, in New York City. Dr. Craven was practicing in Newark

when the War Between the States broke out. He entered the Union Army as a surgeon. Rising from rank to rank, he was named Medical Director of the 10th Corps. He became Medical Purveyor of the Department of Virginia and North Carolina in the early months of 1865. His headquarters then were at Fort Monroe, where he served as Chief Medical Officer. That is how the fortunes of war—triumph for one side, defeat for the other—brought him and Jefferson Davis together.

Dr. Craven's service as an Army physician continued for just a short time after he was transferred from Fort Monroe. He returned to civilian life on January 27, 1866. Instead of resuming his interrupted private practice, however, he became postmaster in Newark. He also devoted himself to completing his book on his relations with the former President. That volume was titled, appropriately enough, *The Prison Life of Jefferson Davis*. A copy is on the reference shelves of the Montgomery Public Library. No doubt other libraries in various parts of the state also have copies.

Apparently, Dr. Craven was only mildly interested in the practice of medicine. For he dabbled in a number of other activities. For instance, he invented machinery which would turn highly objectionable waste matter in slaughter houses into valuable by-products. Later he devised processes for keeping meat fresh for long periods, in storage and in transit. The transatlantic cables laid in 1858, 1865 and 1866 were protected with the gutta-percha covering that he had used so successfully on that wire across the Passaic River years earlier.

Dr. Craven subsequently spent some time at his profession, however; enough, it seems, for him to acquire a considerable fortune, substantially assisted by income from his inventions. He retired, a wealthy man, in 1881. However, he remained active in many fields, several of them of a civic, or community, nature. He died from cerebral hemorrhage on February 14, 1893.

He was not an outstanding physician, but he was a man with a great sympathy for his fellow-man. We of the South have particular reason to be grateful to this Yankee doctor who was kind and humane to the Confederacy's first and only Chief Executive.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

January 1952

Examinations for diphtheria bacilli and Vincent's	296
Agglutination tests (typhoid, Brill's and undulant fever)	1,038
Brucella cultures	18
Typhoid cultures (blood, feces, urine and milk)	745
Examinations for malaria	168
Examinations for intestinal parasites	10,536
Serologic tests for syphilis (blood and spinal fluid)	31,451
Darkfield examinations	4
Examinations for gonococci	1,846
Examinations for tubercle bacilli	2,946
Examinations for meningococci	1
Examinations for Negri bodies (microscopic)	92
Water examinations	1,538
Milk and dairy products examinations	4,192
Miscellaneous	1,832
Total	56,703

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

	Nov.	Dec.	E. E.* Dec.
Typhoid and paratyphoid	1	10	3
Undulant fever	3	11	1
Meningitis	5	13	6
Scarlet fever	43	26	86
Whooping cough	54	123	91
Diphtheria	45	38	47
Tetanus	4	6	3
Tuberculosis	189	147	212
Tularemia	0	0	1
Amebic dysentery	3	0	0
Malaria	12	4	32
Influenza	107	302	322
Smallpox	0	0	0
Measles	73	402	44
Poliomyelitis	37	22	5
Encephalitis	0	2	0
Chickenpox	58	210	127
Typhus fever	3	6	20
Mumps	118	172	47
Cancer	256	291	223
Pellagra	1	1	4
Pneumonia	87	157	286
Syphilis	360	230	1031
Chancroid	17	23	17
Gonorrhea	238	265	464
Rabies—Human cases	1	1	0
Positive animal heads	14	31	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR OCTOBER 1951, AND
COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During October 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births	7347	**	**	28.0	27.8	29.8
Total stillbirths	208	**	**	27.5	28.4	24.4
Deaths, stillbirths excluded	2075	1198	877	7.9	8.1	8.3
Infant deaths— under one year	243	112	131	33.1	32.0	36.5
under one month	161	78	83	21.9	22.2	27.1
Causes of Death						
Tuberculosis, 001-019	65	25	40	24.8	26.1	34.0
Syphilis, 020-029	11	4	7	4.2	6.1	7.0
Dysentery, 045-048					0.4	0.4
Diphtheria, 055	3		3	1.1	0.8	2.3
Whooping cough, 056	5	1	4	1.9	1.5	0.4
Meningococcal infec- tions, 057	1	1		0.4	0.4	0.4
Poliomyelitis, 080, 081	2	1	1	0.8		0.4
Encephalitis, 082, 083	1	1		0.4		0.4
Measles, 065	2	1	1	0.8		
Malaria, 110-117						1.2
Malignant neoplasms, 140-200, 202, 203†	194	137	57	73.9	85.6	100.9
Diabetes mellitus, 260	22	13	9	8.4	8.8	7.7
Pellagra, 281	2	2		0.8	1.9	0.8
Vascular lesions of central nervous sys- tem, 330-334	257	144	113	97.9	104.0	86.6
Other diseases of ner- vous system, 300-318, 340-398	27	17	10	10.3	10.7	11.6
Rheumatic fever, 400-402	2	1	1	0.8	2.3	2.3
Diseases of the heart, 410-443	635	402	233	241.8	225.2	224.2
Diseases of the arte- ries, 450-456	22	16	6	8.4	12.3	7.0
Other diseases of the circulatory system, 444-447, 460-468	35	18	17	13.3	9.6	13.1
Influenza, 480-483	9	7	2	3.4	2.7	3.1
Pneumonia, 490-493	62	34	28	23.6	24.6	26.7
Bronchitis, 500-502	3	1	2	1.1	0.8	1.5
Appendicitis, 550-553	4	3	1	1.5	2.3	3.9
Intestinal obstruction and hernia, 560, 561, 570	16	10	6	6.1	8.8	6.2
Gastro-enteritis and colitis (under 2), 571.0, 764	18	8	10	6.9	6.9	6.2
Cirrhosis of liver, 581	10	7	3	3.8	5.4	8.1
Diseases of pregnancy and childbirth, 640-689	15	3	12	19.8	14.8	15.2
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684	4	1	3	5.4	2.7	3.8
Congenital malforma- tions, 750-759	31	19	12	4.2	4.0	2.5
Accidental deaths, total, 800-962	133	93	40	50.6	63.7	51.8
Motor vehicle acci- dents, 810-835, 960	78	56	22	29.7	35.3	20.9
All other defined causes	392	203	189	148.5	137.7	168.5
Ill-defined and un- known causes, 780, 793, 795	96	26	70	36.6	46.8	42.5

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the October report of the years specified.

**Not comparable or not available.

†Excluding Hodgkins' disease (201); leukemia, aleukemia (204) and mycosis fungoides (205).

AMERICAN MEDICAL ASSOCIATION NEWS

MEDICAL INVESTIGATION HELPS TO IDENTIFY MUTILATED BODIES

Identification of bodies charred or mutilated beyond recognition can be established by careful and prolonged medical investigation.

How such exhaustive studies resulted in the identification of 116 of the 119 persons killed during a fire aboard the steamship "Noronic" while it was tied up at a pier in Toronto, Canada, on Sept. 17, 1949, was reported in the February 23 Journal of the American Medical Association.

The identifications "represent an outstanding achievement, and the arduous medical investigation by which it was accomplished has no precedent," according to the report.

Most of the bodies were absolutely unrecognizable. The facial features were wiped out, the skin was burned away, many limbs were missing, contents of the abdomens were shrivelled, and the clothing frazzled. So severely damaged were the bodies that few distinguishing characteristics remained. The difficulties to be resolved far exceeded the capacity of the accepted procedures in the science of identification, the report pointed out, so that it was necessary to develop several new ones.

Examination of the bodies included an autopsy, a dental study, x-rays which were compared with x-rays taken prior to death whenever possible, fingerprinting, and a thorough description of all property and valuables on the body. Where indicated, special anatomic and chemical studies were made.

In most cases, no one examination resolved in the identification, but rather a combination of them "met with almost perfect results," the report said. Dental evidence was used in 72 cases, autopsy in 70, property in 53, x-ray in 38, and fingerprints in 13. In 50 cases, the assistance of the Canadian and American Red Cross in obtaining past family and medical history was a major contribution toward identification.

Radiological studies of such bodies was a new procedure. X-ray studies made prior to death of 35 of the victims were received by medical examiners, and, by comparison with the x-rays of the bodies, 24 positive identifications were made, according to the report. Confirmatory, but inconclusive, evidence was forthcoming in five more cases.

Another new procedure was the development of graphs, one for men and one for women. These listed the physical, medical and descriptive characteristics of the unidentified bodies and those of the missing persons. When a particular body was excluded as a possibility for a missing person, the square on the chart common to both was filled in black. When the charts were completed, the report stated, they looked like cross-word puzzles, and the possibilities for each body and each person still to be identified stood out clearly.

"It is to be stressed that elimination by the chart was never employed as the final evidence for identification," the report pointed out. "It was upon the positive evidence only that the identification was acceptable; the chart simply pointed out the bodies on which the efforts of the committee were to be concentrated in each case."

Fifty-nine of the bodies were identified at the end of the first week, 78 by the end of the first month, and all but three by the end of four months.

The report was prepared by Dr. T. C. Brown, W. L. Robinson, B. A., M. B., and Dr. R. J. Delaney, of the department of surgical pathology, Toronto General Hospital, Toronto, Canada.

MASS CHEST X-RAY SURVEYS PROVED OF GREAT VALUE

Mass chest x-ray programs have proved of positive value in the discovery and consequent control of tuberculosis, according to Dr. Robert J. Anderson of Washington, medical director and chief of the division of chronic disease and tuberculosis, U. S. Public Health Service.

Writing in the February 23 Journal of the American Medical Association, Dr. Anderson said such surveys also have aided in the discovery of such other chest conditions as tumors, cancer, and heart and blood vessel abnormalities.

Dr. Anderson based his statement on the results of a four-year participation by the U. S. Public Health Service in 14 community-wide chest x-ray surveys, during which more than 5,500,000 persons over 15 years of age throughout the country were examined.

The results disclosed that one out of every 1,000 persons screened will have active tuberculosis that is clinically recognizable, and many of those found with inactive and questionably active disease will later prove to have definitely active tuberculosis, he stated. Moreover, about 85 to 90 per cent of the active cases are unknown to the health department.

"The identification of these previously unknown cases of active tuberculosis represents one of the major contributions of the community-wide survey wherever it is held," according to Dr. Anderson.

In addition, the information acquired appeared to confirm the commonly held notion that tuberculosis prevails to a greater extent at the lower socioeconomic levels, he added.

The over-all survey showed that between 55 and 93 per cent of all eligible population in each community will take advantage of the x-rays. However, the report pointed out, the older age groups do not usually respond as well as the younger population groups. Generally, the response of the two sexes was equal.

Although tuberculosis is the primary concern of community-wide chest x-ray surveys, the screening programs do identify other pathological conditions of the chest, Dr. Anderson stated.

"In view of our aging population, this is assuming greater value as a by-product of the tuberculosis case-finding projects," he added.

REPORTS DANGER IN THERAPY BY HIGH FREQUENCY SOUND WAVES

A warning that treatment by high frequency sound waves may be dangerous was issued by the Council on Physical Medicine

and Rehabilitation of the American Medical Association.

"Although many hundreds of patients have been treated with ultrasound, particularly in Europe, apparently without harmful effects, it is believed that physicians should await further cautious study of ultrasonic therapy before using it indiscriminately in clinical practice," the council's report stressed.

Ultrasonic treatment consists of the use of sound waves of approximately 800,000 cycles per second, which is far beyond the 15,000 frequency limit of the human ear. Certain crystals, such as quartz, will vibrate when charges are placed on opposite surfaces. These electrical oscillations are converted into mechanical vibrations, which, in turn, produce high frequency sound waves. These ultrasonic waves are transmitted to the surface of the part of the body to be treated.

In Europe, according to the report, devices for ultrasonic therapy have been exploited. Exaggerated claims have been made that ultrasonic energy has been of value in the treatment of such afflictions as shingles, sciatica, lumbago, multiple sclerosis and neuralgias.

"If ultrasonic energy is employed properly by skilled physicians and not used indiscriminately as a 'cure-all,' it offers promise of becoming a valuable new therapeutic and diagnostic agent," the report stated.

"Therefore, it is important for American physicians to familiarize themselves with these ultrasonic machines, to examine critically the evidence concerning their possible diagnostic or therapeutic usefulness, and to determine promptly the limitations and dangers of ultrasonic therapy."

Animal experiments have shown that ultrasonic radiation can produce sharply localized heating of living tissues, and cause selective heating of the outside shell of the bone and bone marrow as does no other source of energy used thus far for medical diathermy, the report pointed out.

However, the experiments also showed it caused paralysis following treatment over the spinal cord; was destructive to nerve tissue, growing bones and hair follicles; and when used to treat tumorous growths, not only destroyed some of the growth but also some normal tissues.

"It is certain that ultrasonic energy is a potent destructive agent which may be extremely dangerous if employed indiscriminately by unskilled persons," the council report stated.

"Nevertheless, continued laboratory investigations of the therapeutic and diagnostic possibilities of this new and potent physical agent assuredly are justified."

DELICATE ARTERY OPERATION POSSIBLE IN OLDER PERSONS

A patient's age may no longer be a factor in the operability of coarctation of the aorta, a localized constriction or narrowing of this main artery. The aorta originates from the heart and is the main trunk from which most of the arterial system of the body proceeds.

A second such successful operation of a person 40 years of age or over was reported by Dr. Raymond A. Sokolov, of the department of medicine, Harper Hospital, Detroit, in the February 23 Journal of the American Medical Association. Previously, the operation was successfully performed on a 41-year-old man.

The operation consists of removing the constricted area of the artery, and sewing the two ends of the artery together.

It has been believed that the optimal age for performance of the procedure was between six and 20 years, Dr. Sokolov stated. Physicians felt that in persons over 25 the aorta was too hard for manipulation and suture, especially in persons suffering from such a constriction for a long time.

The case described by Dr. Sokolov was that of a 40-year-old man. Although the operation revealed that the vessels between the ribs were markedly hard, the aorta itself was not, the doctor pointed out. The patient completely recovered from the operation, and was able to resume normal living.

REPORTS SUCCESSFUL TREATMENT OF TRACHOMA WITH SULFONAMIDES

The successful use of the newer sulfonamides in the treatment of trachoma, a serious eye infection which may cause blindness, was reported in the February 23 Journal of the American Medical Association.

These drugs should "stand first in thera-

peutic choice because of their relative mildness of action and apparent specificity against the trachoma virus," in the opinion of Dr. Arthur A. Siniscal of Rolla, Mo., medical director of the Missouri Trachoma Hospital. Dr. Siniscal based his conclusions on the outcome of treatment of 3,500 patients suffering from the affliction observed at the hospital from 1941-1951. Some of the earlier sulfonamides were discarded for various reasons.

In addition to various sulfonamide therapies, the patients were subjected to many of the new antibiotic drugs. The antibiotics, according to Dr. Siniscal, proved of value in combating secondary infections associated with trachoma, but had no effect on trachoma, itself.

Hospital treatment, the report said, was three-fold: (1) eye drops containing a sulfa compound were administered every two hours for from 10 days to three weeks; (2) sulfonamides were administered internally by means of tablets four times a day for the first seven days, and (3) the eyes were coated overnight with a sulfa compound ointment during the entire period of treatment.

When secondary infections were present, surface applications of antibiotic solutions were used. Dr. Siniscal pointed out that systemic injections of antibiotics were not given because the drugs do not produce sufficient measurable concentrations in the eye to be of benefit.

MEDICAL PROGRESS REMOVES STIGMATA OF HEARING DEFECTS

With the great advances in recent years in the alleviation and cure of impaired hearing, there is no need for anyone to suffer the degradation and emotional upset that comes from being an antagonistic sufferer of poor hearing, according to Dr. George W. Frankel of Los Angeles.

Approximately four million persons in the United States suffer from borderline impairment of hearing, Dr. Frankel wrote in *Today's Health*, for February, published by the American Medical Association.

Many persons try to hide this affliction from others, gradually developing a complex, according to Dr. Frankel.

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AN ESSENTIAL ADJUNCT TO SCIENTIFIC MEDICINE

A PERSONAL RELATIONSHIP IN PRIVATE AND HOSPITAL PRACTICE

ALBERT SIDNEY DIX, M. D.
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The purposes of this discussion are: first, to emphasize the fact that scientific medicine cannot by itself fill the needs of our patients, nor does the practice of pure scientific medicine fulfill our obligations to them. Second, I would like to point out the absolute necessity of a personal relationship in medical care both in private practice and as it applies to hospital practice, and more particularly a hospital adapted for interne and resident training. Third, I hope to show how these relationships may be attained. It is not my purpose to engage in controversy or to be critical of any group within or related to our profession. My criticisms are directed to a system which we have permitted to come into being and the part played by all of us in perpetuating this system.

Perhaps at times we consider ourselves superior to the doctor of former years in that his methods were often unscientific as compared to ours. Nevertheless, the doctor of the past century probably practiced the best scientific medicine he knew, and his failures had greater justification than ours today. He surpassed many of us today in the art of history taking and physical diagnosis. His job was harder than ours without a doubt, his cure rate was much lower, and his mortality rate much higher. In many instances, rather than a cure, he was only able to bring comfort and courage to his patient, but he was honored and respected by his patients and

his efforts were appreciated. He was held in high esteem by his community, and, as described by Robert Louis Stevenson,¹ of the men and classes of men that stood out from the common herd the physician stood out almost as a rule. The physician was accepted by his patients not only as qualified to diagnose and treat their illnesses, but, in addition, as the family doctor, a trusted and beloved friend and a wise counsellor in all matters pertaining to the happiness of the family. He deserved this confidence which the patients had in him and they gave it to him freely.

Then, as scientific medical knowledge increased,² the family doctor could not know everything necessary to provide the best available medical service to his patients. As other doctors became specialists and performed spectacularly in their narrower fields, there was wide acclaim for their miraculous feats. Patients became specialist conscious. The old family doctor faced a dilemma. What was his answer to be when people asked him, "What is your specialty?" And immediately on the defensive he became just a general practitioner.

The patient then, sensing his family doctor's defensiveness and insecurity, accepted the designation of "just a general practitioner" as one who did not measure up to the

1. Stevenson, Robert Louis: Eulogy of the Doctor.

2. Waterson, Rollin, and Tobitt, William: Interpretations of the Dichter Report on Doctor-Patient Relationships, G. P. 4: 93, October '51.

professional standards of the specialist. The family doctor lost his exclusive position in the hearts and minds of his patients, and he also lost patients to the specialists. Many general practitioners, feeling that the specialists were competitors, blinded themselves to the values of these special skills available to their patients. When he refused to consult with a specialist, the patient took matters into his own hands and sought one out for himself.

Specialization has greatly improved scientific medicine. But the manner in which specialization came about, and the way in which it was accepted—or perhaps I should say rejected—by the majority of the doctors of the immediate past generation did a great deal to destroy the patient's confidence in his physician, and to relegate him to the common herd from which he had previously stood out. Treatment, in becoming more scientific, became more impersonal, and while the patient now understands and appreciates the values of specialization, he at the same time feels a deeply rooted need for a medical counsellor and guide. He believes that he must make a choice, that he cannot have both.

While this breach was developing in doctor-patient relationships, a marked deterioration was also developing in general practitioner-specialist relationships. This had reached a deplorable state when, not many years ago, a general practitioner, on being invited to join the American Academy of General Practice, responded with the remark, "I can tell the specialists where to go without belonging to an organization." In this stage of degeneration the specialist considers the general practitioner as a half trained doctor, licensed to practice by laws that need changing, and only fit to do certain things which he, the specialist, might determine are safe in his untrained hands. The specialist is obligated by his duty to mankind and his loyalty to the high profession of medicine to protect patients, especially in hospitals, from this type of doctor. Unfortunately, in these United States, there is good evidence that here or there such an attitude did exist, and perhaps still does. On the other hand, the general practitioner had little respect for the specialist, and considered him as egotistical and shortsighted, who thought of patients only in terms of his

favorite system, and who shirked his responsibilities to the public, especially in reference to house calls, particularly at night. Even Sir William Osler was disturbed by specialization, as he wrote: "The extraordinary development of modern science may be her undoing. Specialism, now a necessity, has fragmented the specialties themselves in a way that makes the outlook hazardous. The workers lose all sense of proportion in a maze of minutiae."

I hope that none of us still entertain these prejudices which I have described. On the other hand, let us face some truths which are apparent: first, that a well-trained alert specialist knows more about his particular field of medicine or surgery than the average general practitioner. Second, the well-trained and alert general practitioner knows more about almost every other phase of medicine than does the specialist. In fact, a well-trained general practitioner can diagnose and treat correctly a higher percentage of human ills than any specialist. There must then be mutual respect and admiration, one for the other. There must also be cooperation designed toward furnishing the patient with total medical care.

Today, our problem is far from solved. Confusion among patients is evident on every hand. No sharp dividing line can be or should be drawn between general practice and specialties. The definition of a general practitioner accepted by the American Academy of General Practice is "a legally qualified doctor of medicine who does not limit his practice to a particular field of medicine or surgery." One physician in general practice may include all branches of medicine and surgery in his practice. Another includes all except obstetrics. Another may also exclude major surgery. Still another may add to his exclusions minor surgery and pediatrics. He then becomes an internist. He may continue to exclude other phases of medicine and thus become a cardiologist. Which of these doctors is competent to diagnose and treat heart disease? The patient may go from one to the other, and may get essentially the same treatment from each. He loses confidence in his first doctor when he decides to go to the cardiologist. Then, when he gets the same treatment there he loses confidence in the cardiologist, because certainly, he reasons, the cardiolo-

gist should be able to do better than the general practitioner, or even the internist, who treats other things besides heart disease.

A parallel illustration might again start with a general practitioner, then a general surgeon, and finally a urologist. Can the urologist assume that the general surgeon or even the general practitioner is not competent to diagnose and treat a urologic condition? Who should perform a hysterectomy, a surgeon or a gynecologist? To whom should ophthalmic cases be referred, to the eye, ear, nose and throat specialist, or to him who treats only the eye? The medical profession is confused, and so it is easily understood how confusing our whole system must be to patients. The patient has one object in mind—to get well. Can we blame the diabetic with urethritis due to sugar for going to the urologist? Or the patient with diaphragmatic hiatus hernia for consulting first the cardiologist? Or the hypertensive patient for consulting the ophthalmologist? Perhaps urology would be a good field for the general practitioner, because undoubtedly he gets the diabetics, the children who wet the bed, the cardiacs with nocturia, the nervous patients with frequency, the multipara with cystocele, the fibroids of the uterus pressing on the bladder, and the early pregnancies. What happens to all the above patients when the urologist gets through with them? Presumably they are referred to various specialists. Then we might ask the urologist what happens to them. Does he know, and does he care? Let us assume the diabetic is referred to an internist. Recently a new patient came in the office with an infection and fever. A routine urinalysis showed sugar, and upon being told he had diabetes, the patient answered thus: "I am already under the care of Dr. Internist for diabetes. All I want you to do is to treat the infection. Dr. Internist is just a diabetes doctor." Of course we all know that we cannot treat the infection and ignore the diabetes. I am sure that the internist did not know about the infection which had developed since he last saw the patient. But again, the patient was confused, and perhaps he felt that the internist was only interested in the diabetes and not in his other problems.

Over the years the advance of scientific medicine has brought other significant changes beside specialization in medicine.

As long as the doctor treated his patient in his office or at home he was able to assume full responsibility for the care of his patient. But with the increasing use of hospitals and hospital personnel in the field of medicine, doctors are finding themselves no longer able to assume this full responsibility. How did this come to pass? Did the doctors delegate their responsibilities to hospital personnel? Just where does the doctor stand in this patient-doctor-hospital arrangement? Unfortunately, he too often finds himself in the middle, apologizing to the hospital in defense of the patient, and apologizing to the patient in defense of the hospital. The doctor's chief responsibility is still the patient, and when the patient is subjected to neglect, unnecessary delay and expense or inconsiderate treatment by employees of the hospital, the doctor finds himself in an awkward situation trying to defend these circumstances. He has not felt free to report these happenings as they occur to the proper hospital authorities for fear of being considered uncooperative and out of line with so-called hospital policy.

The purpose of a hospital, its nurses, its laboratory, its x-ray department, its operating rooms and every other part is to aid the doctor in the diagnosis and treatment of his patients. The efficiency of a hospital determines how this purpose is fulfilled. For illustrations let us start at the beginning—which is getting a patient admitted to the hospital. Obviously each of us is interested primarily in our own patients, which are our responsibility. Let us assume that the beds available are quite limited. I think we will agree that under these circumstances the beds should be reserved for the patients whose life and health depend on them the most. For anyone to refuse a hospital bed for a patient in shock from severe bleeding, or with an acute surgical abdominal condition, is a grave responsibility, and this responsibility cannot be exercised lightly or casually, just by saying, "Sorry, no beds." If a hospital is to fulfill its purpose, it must exert every effort possible to admit seriously ill patients, whether staff or private. I am talking about the responsibility to the *patient*. Certainly only a doctor is qualified to assume this responsibility. Hospital rules should aid and never interfere with the exercise of this responsibility.

Now after a patient is admitted, he should be speedily treated and discharged. This, it seems to me, is hospital efficiency. There should never be unwarranted delay for laboratory or x-ray examinations. Patients should certainly be able to get these examinations while in the hospital as speedily as they might be able to get them elsewhere as outpatients, but this is not always true. For an x-ray department to set certain days for certain examinations appears as logical to me as listening to the heart on Monday and palpating the abdomen on Friday. That may be scientific medicine, but it is not designed for the patient's best interests. Operating room schedules could be much improved to consider the patient first, whether private or staff. In some hospitals, treating both private and charity patients, preference in operating room schedules has been given to staff patients. Patients who pay their way are penalized and must wait for the staff patients to be scheduled first. Are these matters part of the care of the patient? Is not the care of the patient primarily the responsibility of the doctor? Where defects occur in this care, cannot the doctor again accept his responsibility? Most of these situations mentioned can be handled by planning and cooperation between the doctors and the hospital administration. It appears to me that a possible solution of many of these problems might originate in a suggestion box, where suggestions and constructive ideas might be collected for study by the executive board of the hospital who, in turn, would have authority to act for the improvement of the hospital.

I am going to say a few words now about kindness to patients. It is not so hard for doctors to be kind to private patients as long as they are agreeable, have a good disposition, and are not critical of us or our care of them. It is not so easy for a doctor, resident or interne to be kind to charity patients who appear to be unappreciative, complaining and critical. The greatest challenge to the doctor, resident, interne, nurse, or hospital employee from superintendent to maid is the attitude toward the charity patient. In charity hospitals many patients come in reluctantly. They may be referred by private physicians in whom they have great faith and confidence, but on their arrival at the hospital they are placed under the charge of

doctors whom they do not know and in whom they have little confidence. They may be afraid and suspicious. It is up to the interne or resident in each case, by his first approach to the patient, to sell himself to the patient. The manner in which a patient is received in the emergency room by the interne or even the nurse may be the determining factor as to whether or not his illness is to be treated successfully. These patients must have extra consideration—we must meet them more than half way and make up for this deficiency and lack of confidence on their part. Our hospital can obtain and deserve a reputation of being cold, purely scientific and cruel; or we can obtain a reputation of being warm, kind and friendly. This adjunct to scientific treatment must be provided to staff as well as private patients. We may be too busy to repair a minor laceration the moment the patient comes in, but we are never too busy for a few words of reassurance or comfort to the patient or his anxious relatives. Patients do not mind waiting their turn as long as they know there is a reason and as long as they know they have not been forgotten. Well trained nurses can aid greatly in this part of the patient's treatment—and it is an important part of the treatment. Overspecialization in outpatient clinics tends toward delay of treatment and discouragement of patients. Sometimes the patient suffers pain and progression of the illness between his first visit to the clinic and his return to the proper clinic on a different day. While I realize there are difficulties in administration of outpatient clinics, our present system tends not only to discourage the patient but to encourage the doctor to pass the buck to someone else. I do not feel that this is the best training for our resident staff. There will soon come a time when they must handle the situation as it first comes to them. It appears to me that a general clinic staffed by our residents could take care of the majority of the patients at the first visit without requiring them to come back another day to start treatment.

There are times when we are worn out from work and long hours, and when we would be willing to pay our own money just to be left alone. Under these circumstances, and when we are awakened in the middle of the night, or called on for work at a time

that might seriously interfere with our family, civic or social responsibilities we have a great temptation to tell the intruder where to go. We probably make more enemies and do more harm to our profession at these times than we do in all our regular working hours. What is the solution? I can think of only three suitable answers that are acceptable to our patients. First, summon what reserve strength both moral and physical that we have left and apply ourselves to the task at hand. Second, have a satisfactory arrangement with another kind and considerate doctor who will *cheerfully* pinch hit for us during the emergency. Third, go out of town for a nice vacation and do not come back until physically and emotionally fit to practice medicine again. Our surgeons say, "Don't operate unless you can do it right." We might also say, "Don't treat sick people and their families unless you can do it right." The average individual comes in contact with but few physicians during his lifetime. He forms his entire opinion of the medical profession by how he is treated. A recent article in a medical journal said, "Doctor, you can sell anything. Why not sell yourself to your patients?"

At the meeting of the American Medical Association in San Francisco in 1950 Dr. Leo Bartemeier³ of Detroit discussed the attitude of the physician. He said: "Patients usually sense whether or not their physicians like them, respect them or dislike them, and all else they may feel about them. The condition of illness often makes them more sensitive, more appreciative of being understood, more easily offended and less tolerant than would be their wont were they in good health. Those physicians who understand these emotional facets are the ones who render the best quality of medical care. No mention is made in medical or surgical reports of the role of the physician's attitude. The patient's refusal of surgery, his tenseness, his restlessness, or his failure to respond to medication are described as though they had nothing to do with the doctor's attitude toward him." Dr. Bartemeier went on to say that not to include the effect of the physician's attitude in medical and surgical reports is to be insufficiently scientific. He said that the behaviour and reac-

tions of patients during the course of medical or surgical treatment reflect their feelings about their physicians just as feeding disturbances in infants and children reflect behaviour and attitudes of the parents.

A new idea has come into the philosophy of medical practice. It appeals to me as a practical solution of the problem as how best to provide adequate, complete, scientific and personal medical care for our patients. I believe that in the cities and other areas where specialists are plentiful, and sometimes too plentiful, that the general practitioner cannot again hold his exclusive place of the past. A good illustration of this occurred to me recently. I delivered a baby to a family that I have attended regularly for about four years. The next morning my patient asked me very timidly and apologetically, "Would you mind if we ask Dr. Pediatrician to take care of the baby? He took such good care of our other children that we would like to have him take care of this one." Now I must confess that until not too long ago this request might have disturbed me and might have impressed me as a lack of confidence in me on the part of the patient. But this new philosophy in medicine provides not only for a family physician but for a *personal*² physician for each individual, and in my mind there is no group of physicians who have exemplified this philosophy better than the pediatricians. The pediatrician is indeed interested in all that concerns his patient, whether physical or emotional, whether related to intrinsic or extrinsic influences. Nutrition and preventive medicine are given first consideration. The pediatrician my patient has for her baby has her complete confidence; not because he is a pediatrician but because he has gained her confidence by his personal relationship with her. A general surgeon can be an ideal personal physician, because he is in a position to interview and examine his patients adequately and to take care of many medical problems and practically all surgical problems. He is in a position to gain the confidence of his patient, and again may direct his entire medical program. The internist also is able to start at the beginning with his patient and follow him through, whatever the diagnosis, to the end of his illness. These four groups, general practice, internal medicine, general surgery,

3. Bartemeier, Leo H.: The Attitude of the Physician, J. A. M. A. 145: 1122 (April 14) 1951.

and pediatrics can best serve as personal physicians to their patients. Pure science reaches its ultimate in the highly limited specialties. It is rare that these specialists are willing to listen to all the patient's troubles. It is rare that they are willing to do complete examinations of their patients. It is rare that they want to assume much responsibility for the patient outside their own limited field. In these instances they are not willing or not competent to serve as a personal physician to the patient. Any doctor who thus limits his practice and his interest in the patient should not forget that he is fulfilling only a part of the patient's needs, and should encourage the patient to associate himself with a doctor, either in general practice or in a general specialty, who is willing to serve as his personal physician. It must be emphasized, however, that it is not the branch of medicine or surgery practiced that determines fitness as a personal physician. The determining factor is the physician himself, and it is possible for a neurosurgeon or obstetrician with a genuine interest in people to be a better personal physician than a physician in general practice who lacks this essential adjunct. However, the mere referral from one specialist to another, without either doctor being willing to direct the entire medical program of the patient, can never take the place of a personal physician.

What do we do when we refer a patient? I have consulted with many physicians in limited fields and have made their knowledge and skill available to my patients. I have referred cases but have never intentionally relinquished the patient. As a matter of fact, when I refer a case to a specialist for diagnosis or treatment I feel an added responsibility, in that my patient expects me to pick out the best doctor available for the problem. That same factor also alerts the specialist because he has to please both patient and referring doctor. With this fact in mind, could it be true that a referred case might get a little better attention, a little more adequate work-up, and better records be kept than in the case where the patient picks out his specialist from the classified section of the telephone book? All doctors should be primarily trained as personal physicians. Internes and residents can, in addition to purely scientific training, get good

training in handling patients. They should appreciate and encourage the relationship existing between private patients and their physicians. Each staff patient should know who his doctor is while in the hospital, and members of the family should have the opportunity to talk to him about the patient. The name of the resident or interne on whose service a patient is assigned should be on the chart of both private and staff patient. There should be no doubt as to the responsibility of internes for private patients as well as staff patients.

In conclusion, I would like to restate the principle that each patient, both in our private practice and in our staff hospital practice, needs a personal relationship with his doctor and should consider the doctor first of all as his friend. We may fail in our attempts to rid the patient of his disease or to stop the process which is taking his life, but we have no valid excuse to fail in maintaining to the end the patient's faith, confidence and love for us. Anyone who, by act of commission or by neglect, destroys that faith injures not only the patient but our profession and hospitals as well.

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Pelvic Pain—Enlargements of the uterus cause backache and abdominal pain because of pelvic congestion, and from the stretching of supportive ligaments due to the increased size of the uterus. Enlargements to be considered are uterine tumors, fibrosis and chronic subinvolution, and adenomyosis. Leiomyomas are the commonest tumors and they assume variable sizes. In many cases one is impressed with the fact that large fibroids will not cause significant pain. Fibrosis uteri, chronic subinvolution or adenomyosis is suspected in the slightly enlarged uterus with a somewhat softened consistency. These conditions are usually seen in the multiparous patient.

Endometriosis of the pelvic viscera has a high place in the classification of gynecologic causes of pelvic pain. Gynecologists are becoming more aware of this condition, and the diagnosis is made much more frequently in recent years. The presence of tender, cul-de-sac nodules, a retroverted tender uterus and fixed adnexa in the patient complaining of backache, lower abdominal pain, dysmenorrhea and dyspareunia offers strong evidence that endometriosis is present. The pain is usually worse just before, during, and immediately following menstruation. The examiner must palpate carefully the cul-de-sac to detect the presence of small endometrial transplants. Rectovaginal examination frequently is helpful in discovering them.—*Douglas, J. Florida M. A., March '52.*

DIAGNOSIS OF DISEASES OF THE COLON

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The title of this paper involves more than can possibly be discussed even within the generous time allotted your speakers, but I wish to emphasize certain aspects of the subject and to discuss particularly the subject of carcinoma of the colon. My remarks will be largely limited to the roentgenologic aspects of colonic disease.

The principal reasons for referring a patient for x-ray examination of the colon are these: (1) rectal bleeding, (2) persistent diarrhea, (3) persistent and increasing constipation, (4) the presence of a palpable abdominal mass which might lie in the colon, (5) loss of weight and (6) unexplained anemia.

The chief diagnostic aids are: (1) an accurate history, (2) a good general physical examination, including digital examination of the rectum, (3) proctosigmoidoscopic examination, (4) microscopic and cultural studies of the stools, and (5) x-ray examination of the colon by barium enema. The first four methods of examination should precede the fifth, and the radiologist should be furnished with all the information gained by them. Too often the reverse is true, and the use of a barium enema delays the examination of the stools for parasites and adequate proctoscopic study. Very few men in this audience are so situated that they cannot obtain, in a short time, a bacteriologic study of the stools. They may not be trained in the use of the proctoscope, but someone nearby is so trained. And finally, the distribution of trained radiologists in Alabama today is much better than that in many states. When one remembers that amebiasis occurs in from 5 to 10 per cent of the population of America, and that 75 per cent of the cancers of the bowel occur in the rectum and sigmoid, the use of the index finger, the proctoscope, and the microscope become almost mandatory to the physician who is attempting to treat the patient with complaints referable to the colon. Once these agents have been employed and the answer still has not been found, then, and only then, is x-ray examination of the colon indicated.

Read before the Association in annual session, Mobile, April 20, 1951.

PREPARATION FOR X-RAY EXAMINATION

Unless strongly contraindicated by profuse hemorrhage, marked localized tenderness, severe nausea, or a very high leucocyte count, castor oil should be given on the afternoon prior to x-ray examination. Supper should be omitted but breakfast allowed. A low enema of soap suds or salt water is given on the morning of the examination. We prefer one and a half ounces of castor oil, although Stevenson, Moreton and Cooper feel that one ounce is sufficient.

In office and hospital work we routinely employ a metal enema tip with a rubber balloon which is inflated after the enema tip passes the rectal sphincter. This is especially helpful in older people and children. Spot films are made during fluoroscopy, and always include an oblique spot film of the sigmoid. Prone films are made before and after evacuation of the enema. Oblique views are added as indicated. Air-barium contrast studies are not used routinely but are used (1) in unexplained rectal bleeding and (2) when a suspicious intraluminal shadow is noted during fluoroscopy or on the original films. Moreton has recently described a method whereby the barium column is stopped at the splenic flexure, air is then introduced, and the barium column followed along the colon by rotating the patient, thus obtaining contrast studies at the same examination. The author's experience with this method is too limited to warrant any statements as to its value.

A few moments spent in explaining the examination to the patient, palpating the abdomen, and assuring him that he will be able to retain the enema because of the rubber balloon in the rectum, will greatly facilitate the examination. In several instances we have thus discovered umbilical or ventral herniae which were causing symptoms.

Valuable information may be gained from a preliminary survey film of the abdomen. In this way urinary calculi, spinal lesions, gallstones, abdominal tumors, pelvic calcifications, and significant gas patterns are often detected. If the barium enema is given first, these may be obscured.

Lesions of the colon, demonstrable by x-ray examination, may be grouped as follows:

1. Lesions Due to Extrinsic Causes: Deformities by abdominal masses, anatomic anomalies, adhesions, etc.
2. Inflammatory Diseases of the Colon: Colitis-amebic, ulcerative, tuberculous, enteritis (regional); lymphogranuloma venereum: diverticulitis.
3. Foreign Bodies: Gallstones, ingested foreign bodies, fecal impactions.
4. Tumors: Benign polyps, lipomata, carcinoma, lymphomas.

Colitis: Amebic colitis may be localized to the cecum and ascending colon or it may be present in other segments of the colon. Bell has described a conical deformity of the cecum very suggestive of amebic infection. Barger emphasizes the undermined ulcer with fairly normal intervening tissue seen on proctoscopic examination, and feels that repeated stool studies are necessary for diagnosis. He states that one of the chief virtues of roentgenologic examination is to rule out other diseases. On the other hand, ulcerative colitis and amebic infection may co-exist. Arendt and Coheen studied 32 cases of parasitic infections of the colon. They feel that lesions in the cecum and lower ascending colon are more suggestive of protozoan infection, whereas ulcerative colitis is manifested by involvement extending continuously from the rectum and sigmoid upward. Their investigations were very carefully made and there is a need of similar studies of a larger number of cases.

Kalil and Robbins made a valuable contribution to the study of ulcerative colitis in reviewing 160 cases of idiopathic ulcerative colitis in which the diagnosis had been established by sigmoidoscopy, colectomy, or autopsy. The first barium enema study in many of these cases was reported as negative, but review of these films in comparison with later studies revealed that early changes (edema of the mucosa and minute erosions) were present at the original examination but were overlooked. Only in the light of later studies did these early changes become significant. Further such critical studies of proven cases of ulcerative colitis would perhaps contribute much of value. It is said that the greatest error of the radio-

logic novice is seeing too much instead of too little; perhaps we could learn more about the early diagnosis of ulcerative colitis if we insisted on periodic examinations of the colon, just as we insist on periodic examinations of the chest when we suspect an early tuberculous lesion. With the exception of missing early malignancies, there is nothing more disturbing than to pronounce a colon examination as negative, only to have that patient return a few months or a year later with evidence of advanced ulcerative disease of the colon.

The tendency of barium to be expelled from a segment of the colon, with accompanying deformity of the wall, described many years ago by Sampson, is still a reliable suggestive sign of tuberculous colitis.

Lymphogranuloma may produce severe obstruction of the rectosigmoid, often with fistula formation. Adequate biopsy and the use of the Frei test may save us from labeling these cases as incurable carcinoma of the rectum. We in the South, with our large Negro population, should always be suspicious of the possible presence of this disease.

Diverticulitis: The mere presence of diverticula in the colon does not mean that the patient has diverticulitis. However, localized tenderness over the diverticula, pain, fever, and leucocytosis may indicate that actual inflammation of the diverticula exists. Perforation of a diverticulum with abscess formation is the most common complication, and, in an area accessible to palpation, a mass can often be felt. Diverticula may also be the source of bleeding. Diverticulosis and carcinoma may be present in the same area, and it is often impossible to distinguish deformity of the colon due to carcinoma from that due to inflammatory swelling of the colonic wall accompanying diverticulitis. When this diagnostic dilemma occurs, exploration is the only safe course.

Foreign Bodies and Impactions: Ingested foreign material or foreign bodies introduced into the rectum may be seen on the survey film. The detection of gallstones passed into the colon is well known. The enteric coating of certain pills should be kept in mind as a source of foreign body shadows. The author was recently mailed a film on which three rounded opaque shadows in the transverse colon had been diagnosed as gall-

stones. Fortunately a cholecystogram made three months previously was available for review and we were able to convince the referring physician that surgery was not indicated.

Fecoliths may some times become temporarily lodged in a segment of the bowel and cause confusion with a true tumor. A milk and molasses enema still remains the most satisfactory agent for dislodging them.

Tumors: Benign polyps may be either single or multiple. They vary greatly in size. Some are flat while others may have long stems permitting the polyp to migrate along the lumen of the bowel. Swenson and Wigh have published an excellent article dealing with the detection of the smaller polypi and with demonstrating the pedicle of sessile polyps. The painstaking studies of Stevenson, Yates and Moreton on the nature of fictitious polyps are very much worth reviewing. A final diagnosis of polyp should never be made without at least one repeat examination on a different day.

Lipomas usually present a fairly broad base and rarely involve the entire surface of the bowel. According to Palazzo they are the third most common benign tumor of the gastrointestinal tract, and intussusception occurs with approximately 50 per cent of the symptomatic lipomas. In his review of 36 lipomas of the gastrointestinal tract, 20 were located in the colon.

Carcinoma: The discovery of a tumor by digital or proctoscopic examination, unless obstructing, calls for a barium enema study of the colon to rule out other tumors higher in the colon. Approximately 3 per cent of all tumors of the colon are multiple. Thomas, Dockery and Waugh reviewed 132 cases of multiple primary carcinomas of the large intestine from the files of the Mayo Clinic. In 91 the multiple lesions were present simultaneously; in 37 a new lesion developed subsequent to removal of the previous one. The average age of patients with multiple lesions was lower than that of patients with single lesions. The presence of the other tumors was not diagnosed in 58.6 per cent of the cases. In all of these instances, a barium enema was not done because an obstructing carcinoma was visualized through the proctoscope. It would be highly desirable if some satisfactory, non-obstructing, non-toxic

opaque medium could be found for enema examination of these patients. Wyatt has suggested the oral use of barium combined with sodium citrate, and has employed this mixture successfully to demonstrate carcinomas above a low obstructing lesion. This method has not been generally used and the author has had no personal experience with it.

Complications of Carcinoma of the Bowel: The principal complications of carcinoma of the bowel are (1) obstruction, (2) abscess and fistula formation, (3) intussusception, and (4) perforation. The presence of a large, tender mass should always make one suspicious of abscess formation. Obstruction can usually be diagnosed from the clinical symptoms and the presence of a distended bowel on a survey film of the abdomen. Intussusception has a characteristic appearance on the film but in all cases of intussusception careful search for tumor should be made. Perforation may be diagnosed by the presence of free air in the peritoneal cavity. Gottlieb, Sharlin and Peck have diagnosed perforation from the presence of feces in the peritoneal cavity with the distribution not conforming to the contour of the bowel.

Following resection of the colon, periodic barium enema studies should be made to determine whether there has been a local recurrence of the resected tumor or whether a benign stricture has formed at the site of anastomosis. Sharpe and Golden have made a valuable study of 42 such examinations. They found that the contour of the colon at the site of anastomosis fell into three groups: (1) short abrupt constriction, (2) long gradual constriction, and (3) no demonstrable deformity. Three cases of recurrent carcinoma presented unilateral constriction at the anastomotic site. Two patients had constricting granulomas formed around silk sutures.

SUMMARY

I. The indications for x-ray examination of the colon are listed.

II. The importance of history, rectal examination and bacteriologic studies is stressed. These examinations should precede the x-ray examination.

III. Methods of x-ray examination are briefly reviewed.

IV. The roentgen findings in inflamma-

tory lesions of the colon are discussed and illustrated.

V. Benign and malignant tumors of the bowel are considered, with brief reference to the complications of malignant tumor.

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15. Swenson, Paul C., and Wigh, Russell: The Role of the Roentgenologist in the Diagnosis of Polypoid Disease of the Colon, *Am. J. Roentgenol.* 59: 108-121, Jan. '48.
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17. Weber, Harry M.: The Diagnosis of Early Intestinal Cancer, *Am. J. Roentgenol.* 64: 929-937, Dec. '50.
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Bronchoscopy in the Newborn—There are certain dangers and contraindications to instrumentation of the airway in the newborn infant. If the infant appears to have respiratory obstruction but there are no rales or rhonchi in the chest, a very careful search for other pathology than the simple retention of mucoid secretions must be made. In such cases, one should be prepared to do a tracheotomy before proceeding with the direct examination, since a tracheotomy may be deemed necessary when the actual obstructing lesion is discovered and evaluated. In cases of respiratory obstruction without rales or rhonchi in the chest, there is little probability that the simple bronchoscopic aspiration will relieve the obstruction.

Evidence of extensive cerebral birth injury is found very frequently when the bronchoscopist is called to aspirate the tracheobronchial tree of an infant who obviously has secretions in the trachea and bronchi that require aspiration to clear the airway. While such infants have many signs that point to the obvious diagnosis of retained secretions, one also notes that there is an absence of deep reflexes of the arms and legs and no motion of the completely flaccid extremities. In such cases, the pharyngeal reflexes are likewise abolished or lost, and the secretions in the trachea are due to the aspiration of pharyngeal secretions. Such infants have difficulty or a complete inability to swallow and any fluids given by mouth increase the respiratory obstruction if they are not promptly respired. In spite of the obvious presence of fluid in the trachea and bronchi of such infants, one should be very guarded in aspirating the tracheobronchial tree directly either with a Samson aspirator or with a bronchoscope, since any instrumentation or manipulation of the infant in this stage is likely to increase the cerebral damage rather than materially assist the infant's respiration. Almost constant pharyngeal suction with a small catheter is to be preferred, the child being placed in slight Trendelenburg position to permit dependent drainage of the trachea.

Repeated attempts at laryngeal catheterization invariably result in laryngeal edema. Consequently, in infants who have respiratory obstruction, the endoscopist must be aware of this possible eventuality and be prepared to do a tracheotomy if the findings in the larynx indicate that an obstruction has occurred at this site due to the trauma. Only a direct examination of the larynx will reveal the nature of the obstruction in such cases. A bronchoscope passed into the trachea will facilitate the operation, making possible a tranquil tracheotomy instead of an emergency procedure and providing the infant with an adequate airway during the operation.—*Holinger and Johnston, Illinois M. J., February '52.*

ANAPHYLACTIC REACTION FROM PENICILLIN

REPORT OF CASE

ROBERT K. WILSON, M. D.

Aliceville, Alabama

As recently as August 4, 1951, Everett¹ reported two cases and cited four other instances² of anaphylactic reactions from penicillin, all secondary to intramuscular infections. I want to report another.

REPORT OF CASE

On August 9, 1951 a white male, age 37 years, in good general health, except for an infection of the left foot, came to the office. Six days before, while swimming, he had sustained a brush-burn type of abrasion of the dorsum of the left foot above the base of the toes when he came in contact with the side of the concrete pool. There was slight swelling of the injured part and a red streak extended from the abrasion toward the medial margin of the foot. There was no inguinal adenopathy. Inquiry was made as to sensitivity to penicillin. The patient said that he had never had any reaction to previous doses, although penicillin in oil made his arm sore. The wound was dressed with 5% sulfathiazol ointment, and 300,000 units of procaine penicillin G in aqueous suspension were given intramuscularly in the lateral aspect of the arm after the plunger had been withdrawn and it was evident that the needle had not entered a vein. The patient remained about 10 minutes. He complained of some generalized itching, but there was no apparent rash and he felt fine so he drove home. About 5 minutes later his wife called and said he was sick and she brought him back to the office. This was about 20 minutes after the injection. He walked into the office and his face was quite flushed and appeared to be swollen, and he complained of feeling faint. He was sweating profusely.

His pulse was rapid, rate about 100, but the radial pulse was of fair quality. He complained of some tightness under the sternum and cramping in the abdomen. He also stated that his feet and back felt swollen. Five minims of adrenalin, 1:1000 aqueous solution, were given subcutaneously immediately after arrival. Within three minutes the patient felt better, but continued to sweat profusely. Within twenty minutes the pulse rate had returned to 72 but he felt weak and complained of a severe headache and occasionally yawned. The tightness in the chest had disappeared but the feet still felt swollen. Auscultation revealed no asthmatic wheezes over the chest. He was given 100 mg. of Demerol (Meperidine Hydrochloride) subcutaneously and was given 40 mg. of Histadyl (Thenylpyramine Hydrochloride, Lilly) intramuscularly. He was allowed to return home about 1 hour after arriving at the office. He was given Histadyl, 100 mg. by mouth, after getting home and he promptly vomited this. He slept well and when seen the next morning was feeling fine. His pulse was 76 and blood pressure 90/60, which was about normal for the patient. He had no edema or urticaria and there was only slight soreness of the arm at the site of injection of the penicillin.

There is little doubt that the patient had developed a sensitivity to penicillin as a result of previous administrations of the drug. A review of the patient's record³ relative to previous administrations of penicillin was made. He was admitted to a Birmingham hospital on October 21, 1948 and discharged November 5, 1948. Diagnosis: Ruptured nucleus pulposus—lumbosacral—with right leg sciatic pain. Chronic lumbosacral sprain. Operation: Removal of ruptured intervertebral disc. Austin-Moore bone block fusion. Graft from left tibia. Penicillin was begun on 10-23-51 and discontinued on 10-27-51—with total dosage for the four days of 1,540,000 units. This information was received in

1. Everette, Reginald: Anaphylactic Reactions from Local Use of Penicillin, *J. A. M. A.* 146: 1314 (August 4th) 1951.

2. Cormia, F. E.; Jacobsen, L. Y., and Smith, E. L.: Reactions to Penicillin, *Bull. U. S. Army M. Dept.* 4: 694, 1945. O'Donovan, W. J., and Klorfajn, I.: Sensitivity to Penicillin: Anaphylaxis and Desensitization, *Lancet* 2: 444, 1946. Waldbott, G. L.: Anaphylactic Death from Penicillin, *J. A. M. A.* 139: 526 (Feb. 19) 1949. Burleson, R. J.: Anaphylactoid Shock Due to Penicillin, *ibid.* 142: 562 (Feb. 25) 1950.

3. Personal communications to author from The Baptist Hospital, Birmingham, Ala., and a local physician.

response to a personal communication to the hospital which stated the penicillin used was the aqueous type.

The patient had an upper respiratory infection and was treated by another local physician on December 18, 1950, when he was given 300,000 units of aqueous suspension of procaine penicillin G. On May 30, 1951 he was also given a dose of 300,000 units of aqueous penicillin for another respiratory infection. In reviewing this case I failed to find that he received any penicillin suspended in oil.

Warren calls attention to an article by Long⁴ in which he cautioned that repeated courses of penicillin will increase the possi-

bility of producing an allergic state, and he added: "It would appear likely that, with the continued, extensive use of penicillin, the number of cases of sensitivity will increase and that, in patients now receiving penicillin with no apparent side effects, sudden and unexpected anaphylactic reactions may develop."

As the cases of sensitivity increase and the number of reactions increase, it may be necessary to do intradermal tests with a plain sterile diluted solution of penicillin before administration of a full dose, as is now the standard procedure before administering antisera; e. g., horse serum, tetanus antitoxin, or diphtheria antitoxin, but, in the meantime, it would be well for all of us who give penicillin to remember that it is not only a very useful antibiotic but may also be a dangerous or even fatal drug.

4. Long, Perrin H.: Symposium on Medical Therapeutics: Clinical Use of Antibiotics, M. Clin. North America 34: 307, 1950.

THIOMERIN FURTHER IMPROVED

WM. J. ATKINSON, JR., M. D.

Mobile, Alabama

A previous study carried out in 1949 on 250 patients, followed for 2 to 6 months each, showed a fairly high incidence of local reactions to Thiomerin (Mercaptomerin)—33 per cent of the patients experienced considerable discomfort at one time or another.

This was reported at the annual meeting of the Medical Association of the State of Alabama, April 1950, and later appeared in this Journal.¹ At that time many other authors were reporting very few to negligible reactions to this drug.²⁻¹³ However, at least one

1. Atkinson, Wm. J., Jr.: Comparison of Newer Mercurial Diuretics, J. M. A. Alabama 20: 229 (Jan.) 1951.

2. Batterman, R. C.; Unterman, D., and DeGraff, A. C.: The Subcutaneous Use of Thiomerin, a New Mercurial Diuretic for Treatment of Congestive Heart Failure, Twenty-Second Session, Am. Heart Association, June 1949.

3. Bay, E. B.: The Treatment of Congestive Heart Failure in the Home, Mod. Concepts Cardiovas. Dis., March 1949.

4. Feinberg, A. R.; Isaacs, J. H., and Boikan, W. S.: Clinical Report on the Toxicity of a New Mercurial Diuretic (Thiomerin) For Subcutaneous Administration, Am. J. M. Sc. 218: 298 (September) 1949.

5. Grossman, J.; Weston, R. E.; Edelman, I. S., and Leiter, L.: Clinical and Physiological Studies on Thiomerin—a Subcutaneously Injectable Mercurial Diuretic, Federation Proc., March 1949.

6. Grossman, J.; Weston, R. E.; Edelman, I. S., and Leiter, L.: Studies on Thiomerin, Twenty-Second Session, Am. Heart Association, June 1949.

7. Herrmann, G. R.; Chriss, J. W.; Hejtmancik,

M. R., and Sims, P. M.: Treatment of Myocardial Failure, Texas State J. Med. 45: 79 (February) 1949.

8. Herrmann, G. R.; Chriss, J. W.; Hejtmancik, M. R., and Sims, P. M.: Modern Treatment of Edema, Am. Prac., March 1949.

9. Herrmann, G. R.: Myocardial Insufficiency, J. A. M. A. 140: 509 (June 11) 1949.

10. Lehman, R. A.: Further Studies on the Acute Toxicity of Mercurial Diuretics, Proc. Soc. Exper. Biol. & Med. 64: 428, 1947.

11. Lehman, R. A.; Taube, H., and King, E. E.: A Comparative Study of the Local Toxic Action of Mercurial Diuretics, Proc. Soc. Exper. Biol. & Med. 71: 1, 1949.

12. Stewart, H., and Shepard, E. M.: Experience with a New Mercurial Diuretic (Thiomerin) in the Treatment of Congestive Heart Failure, Twenty-Second Session, Am. Heart Association, June 1949.

13. Taube, H.; Lehman, R. A., and King, E. E.: Comparative Study of the Local Toxic Action of Thiomerin, Mercuzanthin, and Mercuhydrin, Federation Proc., March 1949.

author¹⁴ also reported local reactions in a high percentage of cases, and an appreciable incidence of systemic reactions.

After this report was given, we learned from Campbell Products, Inc., the original manufacturers of Thiomerin, that there were many technical difficulties in the uniform manufacture and stabilization of this drug; but that these had been overcome and that ways had been developed to stabilize Thiomerin further. In addition to this, we were later told that each lot of Thiomerin is now being tested for toxicity before it is released. With this in mind, we undertook to evaluate the newer product.

Studies on lots of Thiomerin manufactured since January 1950 have shown a marked improvement over our 1949 series. Local reactions occurred in only 2 per cent of 195 cases studied and none were severe. Furthermore the reactions occurred in different lots of the drug and did not appear to be due to variations in quality, since, in each instance, numerous other patients were treated from the same lot without reactions. Systemic reactions occurred in approximately 1 per cent and in both of these cases consisted of nausea and vomiting.

Since the incidence of reactions to Mercuhydrin was previously noted¹ to be 12 per cent when given intramuscularly in the deltoid and 4 per cent in the gluteus maximus, and since the incidence of general reactions was approximately 2 per cent, it is concluded that the newer Thiomerin which is now being manufactured has definite advantages over Mercuhydrin.

Mercuhydrin still has an advantage for the physician's bag in that it comes in individual ampules which do not have to be mixed before administration and do not deteriorate when stored.

1217 Government Street.

More and more it is being recognized that the successful treatment of the tuberculosis patient is not alone in drugs, surgery or bed rest, nor does it stop when he is sent home with his disease arrested or cured. Rehabilitation is that part of the treatment which is aimed specifically at maintaining the cure.—G. D. W. Cameron, M. D.

14. Iglauer, Arnold: The Treatment of Cardiac Edema with Thiomerin Sodium (Mercaptomerin Sodium), Cincinnati J. Med. 31: 137 (May) 1950.

PEDIATRIC CASE REPORTS

Edited by

AMOS C. GIPSON, M. D.

Gadsden, Alabama

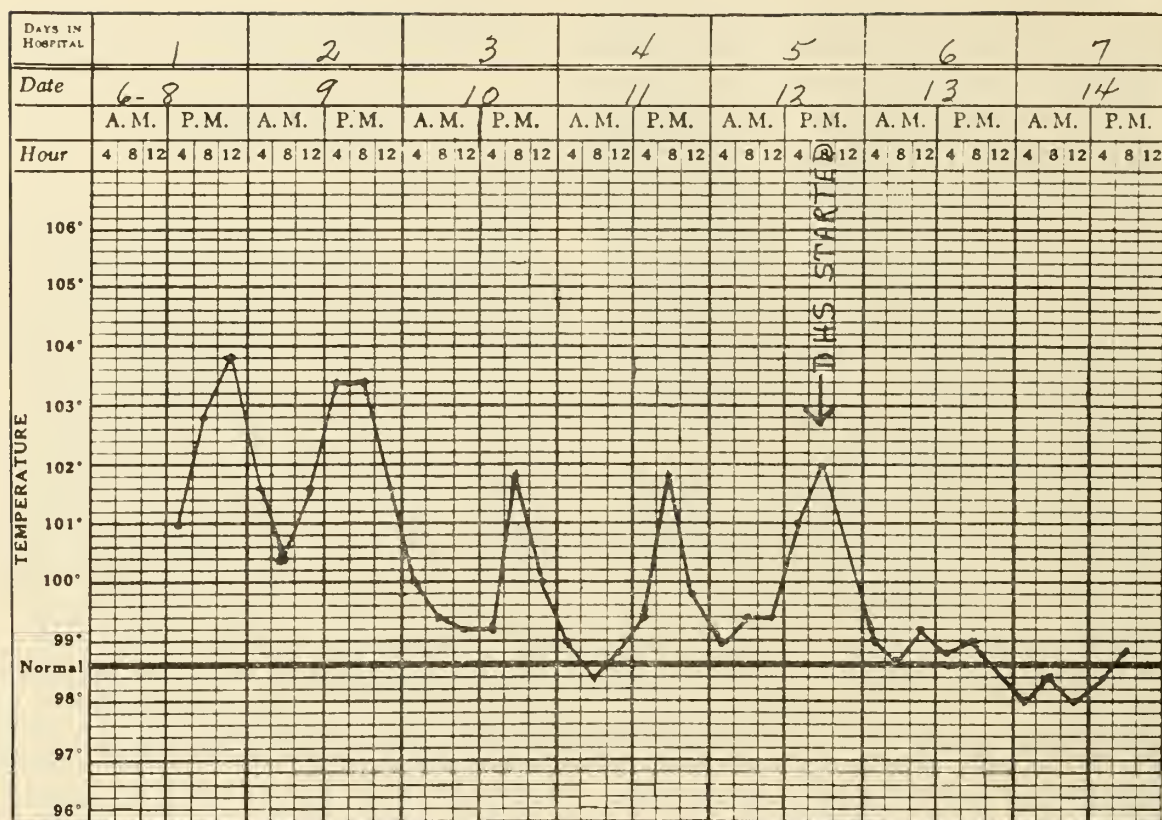
Case presented by

Benjamin P. Clark, M. D.

Pneumonia is one of the most frequently encountered diseases in either a general or pediatric practice and it usually presents no particular problems in diagnosis or treatment, especially in recent years with the many new drugs at our disposal. However, one may at times see a case which is unusually resistant to treatment, either because of the resistance of the organism to the particular drug used or because the organism happens to be one not responsive to the usual drugs. If one could always anticipate such cases in advance and carry out complete bacteriologic studies of the causative organism, including in vitro tests for drug sensitivity, treatment would be simple indeed. However, in the usual practice, time and facilities available do not permit of such studies and it is then necessary to attempt to find the most suitable drug on a more or less trial and error basis. Such a case is the one presented here.

CASE REPORT

This 10 year old white boy was first seen in the Children's Clinic 6/7/51 because of fever. Physical examination was negative except for slight injection of the pharynx. There was a moderate leucocytosis, with a definite shift to the left. He was given 300,000 units of procain penicillin in aqueous suspension and put on a double sulfonamide preparation by mouth. The following day he returned with a higher fever than when first seen but with no new symptoms. At this visit an x-ray film of the chest was made and it revealed an area of consolidation in the right upper lobe. He was admitted to the hospital and started on treatment with 300,000 units of aqueous penicillin every three hours and the sulfonamide continued. As can be seen from the temperature curve, he had some response to this treatment but he continued to have evening spikes of fever up to 102° F. It was necessary to stop the sulfonamide because of vomiting. On the fifth hospital day Dihydrostreptomycin, 1 Gm. each twelve hours, was started and his



temperature never again went above normal. He was discharged on the eighth day. Tuberculin tests made during and after hospitalization have been negative.

Discussion: In retrospect it is easy to see that the failure of this lad to respond during the first 24 hours of treatment with average doses of penicillin and sulfonamide drugs should have been a warning to us that we were dealing with an unusual picture. Certainly his failure to make a complete response to massive doses of penicillin within 24 hours after hospitalization should have been enough to cause us to make a much earlier change in treatment program. However, we waited until the fifth hospital day to start making changes. Fortunately, we apparently hit on the right drug the first time we made a change. One cannot always be this lucky. One also wonders what would have happened had this lad been started on aureomycin, terramycin or chloromycetin. Some authorities feel that in any case of pneumonia where the etiological organism is unknown aureomycin is the drug of choice.

We are not prepared to even guess at the

organism responsible for this lad's pneumonia. We feel that *H. influenza* is unlikely because of the age (10 years). Friedlander's aerogenes is a possible choice. A penicillin-sulfonamide resistant strain of pneumococcus may have been present or perhaps this was a mixed infection since he responded to a certain degree to large doses of penicillin.

The lesson that we learned from this case was that failure to respond to a given drug within a reasonable length of time when adequate doses are being given and, in the absence of definite bacteriologic diagnosis, should lead one to make an earlier change of therapeutic agent.

Every general hospital can speed the ultimate eradication of tuberculosis in this country by adopting its own tuberculosis control program. This program should emphasize at least three features: routine admission chest x-ray films for all patients and periodic chest x-ray films for personnel; isolation precautions for patients with sputum containing acid-fast bacilli; and provisions for prompt therapy of all patients found to have active pulmonary tuberculosis. No matter how large or how small the general hospital, it can find a form of routine x-ray examination best suited to it.—*Sydney Jacobs, M. D., Diseases of the Chest, November 1951.*

Acute Appendicitis—The more one sees of acute appendicitis, the more one respects the condition. The statement "only an appendix" is indeed a dangerous one. This condition is most frequently found in individuals under the age of forty and is somewhat more common in males. It will be recalled that gallbladder conditions appear most frequently after the age of forty. The story the patient relates is usually quite stereotyped. To put it in his language: "Something I ate gave me a belly-ache." This is his way of describing acute epigastric distress. When he gets his "belly-ache" he often attempts to obtain relief with either a cathartic or an enema. Within the first twenty-four hours his "belly-ache" becomes a soreness low on the right side. His acute epigastric distress has become localized to the right lower quadrant. The "two-question test" is both useful and time-saving. Question Number 1: "Where was your pain when it started?"; to this interrogation the patient points to his entire abdomen. Question Number 2: "Where does it hurt you now?"; he then points to the right lower quadrant, usually McBurney's point. This simple method of having the patient demonstrate diffuse pain which localizes to the right lower quadrant will diagnose the vast majority of cases of acute appendicitis.

Nausea and vomiting have been impressed upon us as being associated with appendicitis. This is the exception and not the rule. Anorexia, or loss of appetite, is more constant and more important than either nausea or vomiting. Anorexia, nausea, and vomiting are the three degrees of one symptom; anorexia is the mildest form and is associated with mild distention of the appendix; nausea, the middle degree, is due to moderate distention; and vomiting, the maximum degree, is found in greatly distended appendices. The most common symptom in acute appendicitis is anorexia, and if the patient states that his appetite is not altered we doubt the diagnosis of an acute appendix. Two complaints which are extremely rare in acute appendicitis are diarrhea and chills. These are probably found in less than one per cent of the cases. Constipation is the rule.

Fever is not an early finding in acute appendicitis; in fact, if present it is suggestive of peritoneal soiling. It is true that cases of acute appendicitis may have a fever of 102°, or 103°, but these are no longer cases of appendicitis; they are cases of far advanced peritonitis. Children prove the exception to this rule. If appendices could be operated upon when the temperature is below 99° the mortality would be very low.

Acute appendicitis does not give right rectus rigidity. Although the reverse is taught in many schools and textbooks, this point should be clarified. It is impossible for an individual to contract his right rectus muscle without contracting the left; therefore, when pressure is made upon an inflamed area, both rectus muscles contract. When only one rectus is rigid it suggests an underlying mass, such as a tumor or abscess. When both recti contract to pressure it should be considered "muscular defense" rather than right or

left rectus rigidity. The importance of this bears emphasis when we realize that diagnosis, treatment and prognosis may depend upon the presence of right rectus rigidity or simple muscular defense.—*Thorek, J. M. A. Georgia, Feb. 1952.*

Intraocular Foreign Bodies—Although visual safety programs have reduced the number of intraocular foreign bodies, they still constitute one of the most common of serious eye injuries. Such a body is often unsuspected by examiner and patient. The patient may have felt a momentary sting while working on metal but may notice little effect on his vision, his only symptom being one of slight pain in the eye or the sensation of a foreign body. When the examiner finds nothing under the lids or on the cornea he may be inclined to dismiss the patient. Examination with the biomicroscope is very valuable in these cases, and so is the history. Inquire carefully into the history of the injury. If the patient has been working at a task in which it is possible for a small, sharp particle to fly off at high speed, make an x-ray examination of the eye without delay. With the biomicroscope, or even with the loupe, a small penetrating track can be seen, usually in the cornea. In addition, there is the telltale mark of a penetrating injury of the cornea, corneal epithelial edema, and often striate keratitis. There are a few cells floating in the aqueous, a faint ray, and miosis. There may be a hole in the iris. The foreign body, depending upon its location, may or may not be seen with the ophthalmoscope, and there may or may not be aqueous or vitreous bleeding.

Where large foreign bodies have penetrated the globe the diagnosis is easy.

Management of an intraocular foreign body consists in confirmation of the foreign body with x-ray and administration of tetanus antitoxin.

If the patient must be transported some distance for removal of the foreign body, atropine should be placed in the eye and the eye bandaged. The patient should be kept as quiet as possible with no lifting, stooping or straining. Both antibiotics and sulfadiazine are indicated and should be started promptly. No attempt should be made to remove the foreign body until accurate localizing films are made.

The feasibility of removal depends primarily upon whether or not it is magnetic. If magnetic, there are two main routes of removal. One is the anterior route in which the foreign body is pulled around the lens and removed through an incision at the limbus. The other is the posterior route in which the foreign body is removed through an incision in the sclera, either over the pars plana, or directly over the site of the foreign body. It is felt that when the lens is damaged, and the foreign body is not over two millimeters in size, the anterior route extraction may be tried. However, when a body is large or the lens undamaged, the posterior route is preferred.

If the foreign body is in the vitreous, an incision in the pars plana is indicated. If it lies in the retina . . . removal with an incision directly over the foreign body is preferable . . . —*Wendland, Journal Lancet, March '52.*

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A TIMELY OBJECTIVE

We have no way of knowing exactly how many physicians in the Nation went to the polls in the last presidential election, but we have heard that doctors in the past have not distinguished themselves in the matter of registration and voting.

Since 1948 the members of the medical profession have shown marked improvement in their voting performance and their interest in public affairs. However, we still have a long way to go. The objective in 1952—a critical year of decision if there ever was one—should be nothing less than a 100 per cent registration and voting record by physicians.

Only about half of the eligible voters in this country exercise their privilege of voting in national elections. It is up to physicians to set an example and lead the way in the effort to improve that record. The more people who use that privilege, the longer it will last. Do your part: first, *Register*; then, *Vote*. And of equal importance, see that your family does the same.

A RESOLUTION

WHEREAS, Almighty God in His omniscience has seen fit to remove from our company Dr. I. C. Bates, and

WHEREAS, His place at the council seat of this Medical Society may never be filled by another, and

WHEREAS, We realize that often the Master plucks the choicest flower from His garden, therefore be it

Resolved, By the Houston County Medical Society, that we do extend our heartfelt sympathy to his beloved family and further that we pray that they may understand that our hearts are also heavy with grief at the parting with this our brother; and be it further

Resolved, That we shall forever hold his memory dear to our hearts and that we shall remember always his cheerfulness and his sincere cooperation in all things good; and further that we know that this entire community has sustained a severe loss from which it will require many years to recover, and we know that the hearts of many thousands of kindly people whom this good doctor attended throughout his lifetime will share with us the heartache of parting; and be it further

Resolved, That we pray that God may, in His tender mercy and graciousness, give solace to the heart-broken family of this good man and that we commend this bereaved family to the eternal

grace of our Lord, knowing that He will wipe away all tears and heal every hurt; and be it further

Resolved, That a copy of these resolutions be transmitted to the widow of Dr. Bates and that a copy be placed in the Dothan Eagle, a copy placed in the minutes of this Society, and a copy sent to the State Medical Association for preservation.

The Houston County Medical Society
By the President and the Secretary.

A RESOLUTION

WHEREAS, God in His infinite wisdom, has seen fit to remove from the field of labor, Mr. Rogers B. Collier, our good friend and fellow-worker in the interest of good health in this community, and

WHEREAS, We realize that the family of this

good and earnest man has sustained an irrecoverable hurt, and

WHEREAS, Our hearts are filled with grief at the parting with this, our fellow-worker, therefore be it

Resolved, That we do commend his family to the solace of God and His omniscient mercy and that we shall long feel the bitter loss which his parting has engendered in our lives and our hearts; and be it further

Resolved, That a copy of these resolutions be spread upon the minutes of this Society, a copy sent to the bereaved family, a copy displayed in the Dothan Eagle, and a copy furnished the State Medical Journal so that men of all stations may know that we realize the great loss which we have sustained in the untimely departure of this our good friend and associate.

Houston County Medical Society
By The President and Secretary

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

OVERSIGHT

W. A. Dozier, Jr.

Director of Public Relations

When the seemingly innumerable scandals, both large and small, that are coming to light in our government today are coupled with a recent editorial entitled Eating High Off Their Hog which appeared in the Montgomery Advertiser, one may begin to get a better view of what has so often been discussed in this column, namely an apparent oversight or complete disregard for the basic quality of individualism. And in this case it seems that there is a moral factor concerned.

The above mentioned editorial deals with the latest figures compiled by Tax Outlook, which figures show how much of each tax dollar is returned to the individual states. The writer was taking to task those people who do not give the full picture which shows that Alabama gets back twenty-two cents on the dollar while other and richer states do not get as much. For example, California and Illinois, along with others, are listed as getting only eight cents and five cents respectively. Mention is also made of the case against these poorer states which do not tax new industries, while the richer

states tax theirs, the case being that this is unfair if the richer states are paying higher sums through taxing their industries so that the poorer states may exempt possible tax yielders.

The editorial did not say that Alabama had no right to complain about its tax bill. Instead one finds, "Alabama has a right to protest against the federal tax bill. But the richer states have a much better right to complain . . . Alabama has been eating high off the rich states' hog."

Perhaps the argument is no good. It seems impossible to sell it to the public, especially when politicians feed us the something-for-nothing idea; but why would it not be a good idea to let each state stand on its own feet? The logic of Alabama and its citizens going to a common trough and expecting Illinois to help support us still has not become clear to some people.

The complaint here is not against what the editorial said but the fact that it did not go far enough. The editor doubtlessly knows far more about moulding public opinion than does this writer; but if experience shows anything, surely it points out the necessity of being forthright, simple, and clear. In other words why leave only an implica-

tion when a concise statement is needed? Such oversights, when giving a complete picture, too often lead to the opposite result from the one desired.

Is not the moral issue in this matter one of each state's standing on its own feet and not expecting another governmental body to supply the money? Is not there an issue of what happens to the people in a state when they depend on someone else to furnish the wherewithal? Is there any difference in the results if the "free" money comes from a benevolent federal government or if it comes from the people of another state?

The arguments for taking from the rich to help the poor are well understood and have been stated over and over again. Also, one hears much about the necessity of keeping ourselves strong as a nation because of the national defense needs. All of these things sound good on paper, but in practice do they get the desired results? The question here seems to be one of whether or not such a system lowers the moral fibre enough to counteract any good that may be derived. In other words, is all of this right or is it wrong?

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

CHRONIC ILLNESS—A GROWING PROBLEM

If it were possible to wipe the health slate clean of chronic diseases, people would live to be 115 years of age. We have that assurance from a prominent hospital superintendent of New York City. That authority, Dr. A. P. Merrill, said a few months ago:

"Some day it may be possible to go to the death-bed of a man of 62 and tell him: 'There has been a mistake. You have another 50 years to live.' This miracle will come to pass only after chronic disease—the nation's number one health problem—has been put to rout."

Dr. Merrill expressed optimism regarding the eventual mastery of chronic disease. And his optimism, he declared, was shared by many other men and women of medicine. Such conditions are not necessarily here to stay, he added. He said:

"A tremendous amount of research, education and prevention must still be done if chronic disease is to follow acute disease into the direction of oblivion. But this is only a small part of the job that lies ahead. Society has a larger part to perform, that of providing the facilities, equipment and enthusiasm. The final part is in the hands of God."

A few weeks after Dr. Merrill made his statement at the annual convention in Boston of the American Association of Nursing Homes, an even better known medical au-

thority discussed the problem of health and disease in general and certain forms of chronic illness in particular. He was Dr. Leonard A. Scheele, Surgeon General of the U. S. Public Health Service. He declared in a radio interview:

"Approximately 600,000 have some type of cancer; between 9 and 10 million have some kind of heart ailment; half a million people are suffering from active tuberculosis, and over 900,000 have a complete or partial disability from the crippling effects of arthritis and rheumatism."

Like Dr. Merrill, Dr. Scheele expressed optimism regarding those chronic killers and cripples. Research on these forms of illness, he said, is "coming along slowly but positively."

Still another optimist as far as the chronic diseases are concerned is Dr. Leonard W. Mayo. And Dr. Mayo's optimism rests upon a particularly solid basis. For he is chairman of the Commission on Chronic Illness. At the same time he does not blink—or attempt to blink—the fact that chronic illness is still a major and indeed a baffling problem. He wrote in an introduction to a booklet recently issued by the group which he heads:

"There is wide agreement that the major medical care problem in the country is chronic disease. One of every six people is chronically ill; three of four hospital beds are occupied by victims of long-time illnesses. Many of these patients are chronically ill because they did not seek the attention of doctors early enough. Some are crowding hospitals who would be better off at

home, if professional supplementary home care were available. And still others are incapacitated who could learn to take care of themselves and lead useful lives with proper rehabilitation. As a result, the chronically ill are taking a disproportionate amount of time of doctors, nurses and welfare workers, and are overloading hospitals and other medical facilities."

The troublesome problem brought into being by chronic illness is practically everybody's problem, Dr. Mayo reminds us, just as Dr. Merrill does. It is, he says, "a problem that can be solved only with the full cooperation of the medical profession and public health and welfare officials working together." It is also, he tells us, "a problem that needs to be understood by the public." Its solution "is dependent not only on the professions, but on the community leadership that in this country is responsible for producing such medical care facilities as hospitals, diagnostic centers, and home care programs."

The recently published booklet for which Dr. Mayo wrote his introduction spreads optimism even in its title. For it is titled *Something Can Be Done About Chronic Illness*. Its author is Herbert Yahraes, whose contributions to the literature of public and personal health have given him considerable distinction. This is the latest member of the long and distinguished Public Affairs Series. No doubt you have seen and heard references to one or more other publications in that series.

Mr. Yahraes tells about Billy. (He does not give Billy's last name. But that does not matter.) He is five years old. And he has just recovered from an attack of poliomyelitis. But perhaps we should not use that word *recovered*. For it is not quite the word to use in Billy's case. For, when you say a person has recovered from a form of illness, you mean, or imply, that he or she is now entirely well, as far as it is concerned. And Billy was not yet back to where he was when the polio virus struck him down. Nor, it seemed certain to his family and the doctors, would he ever be back to that happy pre-polio condition. For Billy's illness left behind what doctors call a "residual." That, in the layman's language, means permanent physical change, or impairment. In Billy's case it was a partial paralysis of the right leg. That means that he would have to learn to walk all over again. Billy's case was a

more or less typical case of chronic illness, the condition we are considering in this paper.

Mr. Yahraes also tells us about other more or less typical victims of chronic illness. There is 14-year old Mary, who has been bravely carrying on with her school work while lying in bed. (That's where she has been since she suffered her second attack of rheumatic fever some eight months ago.) There is Michael. Michael is 17 and looks like a perfectly healthy specimen of youthhood. But Michael's looks are deceptive, very deceptive. Normal-looking and normal-acting most of the time, he is, nevertheless, subject to epileptic attacks. (In earlier and less sympathetic days, his neighbors would have said he "had fits.") Then there is Tom Henderson. Tom, a fledgling lawyer eager to get started in his profession, received the surprise of his life soon after deciding to take out some additional insurance. When the doctor gave him the usual physical examination—both considered it just a formality—the laboratory report showed him to have an incipient case of diabetes. There is Mrs. Clifford, a clerk in a department store. She cannot work regularly. For she has arthritis. And that is so painful at times she has to stay at home. Jane Perkins is thin, much too thin, her friends say. But she has to watch what she eats, at that. For, thin as she is, she suffers from high blood pressure. Dr. Martin delivered his neighbor's babies, looked after their health and attended them in their final illnesses, with seldom a thought of himself or the possibility that he might be a patient himself some day. He kept that up for 30 years. Then he began seeing and feeling disturbing symptoms that meant more to him than to the medically uneducated. His suspicions led to a diagnosis of cancer. And finally, in Mr. Yahraes' parade of typical chronic disease victims, there is Mr. Fuller, an elderly man. He has suffered a stroke. His right side is paralyzed.

Fortunately, all victims of chronic illness are not very sick, as one normally thinks of illness. Many are not in particularly great pain. A large percentage of them are able to work, at least most of the time. Perhaps the public has obtained an incorrect impression of the seriousness of chronic illness, from the point of view of its disabling pow-

er. Perhaps we need to think of it more in terms of its original meaning. Mr. Yahraes tells us the term comes from a Greek word meaning "concerning (or regarding) time." Chronic disease, therefore, is illness lasting a long time. As already pointed out, it may or may not be painful. It may or may not be disabling. It may or may not be costly to treat. But it almost certainly is slow in developing, or at least in manifesting itself. It almost always is also slow in being cured. And the chances are that a particular illness of this kind will prove a heavy financial liability.

There are a few widely held misconceptions that we need to get out of people's minds. One of them is that chronic disease is almost exclusively a problem of the later years. It is true that many chronic diseases are particularly prevalent among those who have reached or passed their physical prime. But, as Mr. Yahraes tells us, "one case out of every six involves a person under twenty-five, and one out of every two involves a person under forty-five." One of the most troublesome of chronic illnesses, cerebral palsy, claims most of its victims just before, during or just after birth. (Incidentally, its present victims are said to number about half a million.) Rheumatoid arthritis usually appears between the ages of 35 and 40. (It too claims its victims by the hundreds of thousands. It is estimated that those currently affected number about a million.) Cancer, usually associated in most people's minds with the elderly, or at least the middle-aged, is by no means a stranger to childhood. Even infancy feels its cold, clammy, deathlike hands at times. About 600,000 people of all ages are believed to be in its grip at the present time. Diabetes, with an estimated 2,000,000 victims as of this moment, likewise does not wait for a person to reach middle age before attacking. And, finally, illness affecting the heart and arteries, by far the greatest killer known, is no stranger to infancy and childhood. Its estimated 9,000,000 victims cover every age group, although older people predominate.

The present grave chronic disease problem is an unfortunate by-product of a notable medical and public health achievement. We are gradually mastering many of the ancient killers. As we do so, more and more of us escape death in our comparative youth.

That leaves many more of us to live into and beyond middle age. That, in turn, results in a much larger number of men and women who are particularly susceptible to the chronic or degenerative diseases.

You may not realize how much the proportion of older people to total population has increased in recent decades. Mr. Yahraes quotes some informative figures. In 1900, he says, only one American out of every 25 was 65 years of age or older. In other words, 96 Americans out of every 100, on an average, were under 65. Since then, he goes on, that proportion has about doubled. That is, about eight per cent of all Americans are older Americans. Moreover—and Mr. Yahraes reminds us of that too—that ratio of older people to total population is almost certain to increase. By the end of the century there is every reason to think that some 25,000,000 Americans will be 65 years of age and older.

Do not think the public health agencies and the medical profession have been asleep to this growing problem. They have been very much concerned about it. And, more important, they have been trying to do something about it. There is still much to be done of course. But they feel they are on their way.

Mr. Yahraes wrote:

"Within the last generation, medical science has advanced further against chronic disease than ever before. It has given us insulin for diabetes, sodium dilantin for epilepsy, cortisone and ACTH for rheumatoid arthritis, and a variety of other drugs; it has developed simpler and surer diagnostic methods, made surgery—even on the brain and heart—relatively safe, and tremendously broadened the field of rehabilitation."

Nevertheless, as Mr. Yahraes and any number of others have emphasized, we need to let our people—our arthritic, our cancer-diseased, our diabetics and the other victims of chronic illness—know about that progress. We need to impress upon them the importance of availing themselves of these life-saving and health-restoring drugs and facilities. We need to make all our people—in Alabama and throughout the country and the world—realize that many of them need not suffer as they are suffering. We need to tell them of the chances they may have to return to economic self-support. There is an

opportunity for all of us to spread this good news far and wide. It should result in the saving of many, many lives.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director
SPECIMENS EXAMINED

February 1952

Examinations for diphtheria bacilli and Vincent's	165
Agglutination tests (typhoid, Brill's and undulant fever)	909
Brucella cultures	39
Typhoid cultures (blood, feces, urine and milk)	703
Examinations for malaria	183
Examinations for intestinal parasites	15,189
Serologic tests for syphilis (blood and spinal fluid)	31,710
Darkfield examinations	6
Examinations for gonococci	1,661
Examinations for tubercle bacilli	2,852
Examinations for meningococci	
Examinations for Negri bodies (microscopic)	109
Water examinations	1,381
Milk and dairy products examinations	4,110
Miscellaneous	2,738
Total	61,755

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director
CURRENT MORBIDITY STATISTICS

1952

	Dec.	Jan.	E. E.* Jan.
Typhoid and paratyphoid	10	4	2
Undulant fever	11	0	2
Meningitis	13	9	13
Scarlet fever	26	50	88
Whooping cough	123	55	84
Diphtheria	38	20	35
Tetanus	6	1	2
Tuberculosis	147	178	199
Tularemia	0	2	1
Amebic dysentery	0	0	2
Malaria	4	2	14
Influenza	302	743	968
Smallpox	0	0	0
Measles	402	949	55
Poliomyelitis	22	6	2
Encephalitis	2	1	0
Chickenpox	210	275	228
Typhus fever	6	3	16
Mumps	172	243	116
Cancer	291	343	222
Pellagra	1	0	1
Pneumonia	157	224	391
Syphilis	230	220	781
Chancroid	23	6	11
Gonorrhea	265	262	563
Rabies—Human cases	1	0	0
Positive animal heads	31	35	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

**EFFORTS IN THE CONTROL OF
TYPHUS FEVER**

Contributed by

J. P. Gilbert
Sr. Pub. Health Eng.

In earlier years, suppressive measures for the control of typhus fever (Brill's disease) were limited to rat poisoning campaigns carried out in towns and communities where cases of the disease were reported to have occurred. Despite this control effort, the total number of cases in Alabama steadily increased to an alarming high of 892 cases reported for the year 1944.

In the fall of 1945, the U. S. Public Health Service allocated funds for typhus control to the Alabama State Health Department to organize and operate control programs in pre-approved counties within the state. The approved counties were designated on the basis of the highest incidence of typhus morbidity.

The program, as originally planned, envisioned the control of typhus fever through the county-wide application of 10% DDT powder. This material was applied to rat runs, burrows, and other harborages primarily for rat flea control. It was thought that, by obtaining control of the vector responsible for transmission of the disease from rat to man, the chain of transmission could be broken.

As the program developed, rat extermination measures were included to reduce the degree of rat infestation and consequently the number of typhus infected rats.

In those counties electing to participate, local governing bodies appropriated the necessary matching funds for the continued operation of the program. Four counties and a large number of cities have carried on continuous projects. In some of the counties approved for inclusion in the program local appropriations have permitted only limited treatment.

Evaluation studies and surveys were carried on to determine the effectiveness of the program. The information obtained indicated a marked decrease in the number of typhus infected rats in areas receiving con-

tinuous treatment. Studies in other areas in which only limited operations were achieved indicate the existence of a high percentage of typhus infected rats.

In a further effort to demonstrate the feasibility of typhus eradication on an area-wide basis, a special experimental project is now being planned. The proposed project will be established in a county where the incidence of typhus in rats is relatively high. The project will operate in cooperation with the Rodent Control and Investigations Section of the Communicable Disease Center, an agency of the U. S. Public Health Service.

The proposed method of operation includes: systematic trapping of all premises in the selected county to determine the prevalence of rats, rat fleas, and typhus in rats; sanitation measures affecting rat environment, DDT dusting, use of poison bait material, and gassing; and the systematic reinspection and trapping of treated premises to determine the effectiveness of the program.

It is proposed to use poisoned bait prepared with Warfarin, a chemical which reduces the clotting ability of blood and results in hemorrhage. The poisoning agent will be used in a one-half of one per cent concentration and will be, as a safety precaution, distributed in specially constructed metal bait receptacles.

As proposed, the program will be carried on continuously until a satisfactory degree of eradication will have been achieved or until it has been demonstrated that the program is no longer beneficial.

Complete records of all phases of the program will be maintained to determine the overall cost of the project and the degree of control accomplished.

It is believed that the proposed program will demonstrate that typhus control projects can effectively and economically eradicate typhus in an area where complete control measures are utilized.

It is rare to see an American child with a hunchback as a result of bovine tuberculosis. Virtual eradication of this disease in cattle has nearly eliminated one very important source of infection in children who might be exposed to infection through direct contact or consumption of milk from tuberculous cattle.—C. H. Pals, D. V. M., *Am. J. Pub. Health*, Sept. '51.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR NOVEMBER 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During November 1951			Rates (Annual Basis*)		
	Total	White	Colored	1951	1950	1949
Total live births.....	6564	**	**	25.8	27.7	26.9
Total stillbirths.....	160	**	**	23.8	27.8	29.1
Deaths, stillbirths excluded.....	2274	1319	955	8.9	8.6	9.1
Infant deaths:						
under one year.....	255	124	131	38.8	36.5	42.3
under one month.....	161	82	79	24.5	23.9	30.1
Causes of Death						
Tuberculosis, 001-019.....	69	36	33	27.1	22.2	33.2
Syphilis, 020-029.....	8	3	5	3.1	4.8	11.2
Typhoid and paratyphoid, 040, 041.....						0.4
Dysentery, 045-048.....					1.2	0.8
Diphtheria, 055.....	5	2	3	2.0	2.8	1.2
Whooping cough, 056.....	1		1	0.4	1.2	0.4
Meningococcal infections, 057.....	3	3			1.2	0.8
Poliomyelitis, 080, 081.....	3	2	1	1.2	1.6	0.8
Malaria, 110-117.....	1		1	0.4	1.2	0.4
Malignant neoplasms, 140-200, 202, 203†.....	243	170	73	95.3	86.8	87.1
Diabetes mellitus, 260.....	27	18	9	10.6	11.9	11.6
Pellagra, 281.....	1	1		0.4	0.4	2.4
Vascular lesions of central nervous system, 330-334.....	296	157	139	116.1	102.3	100.7
Other diseases of nervous system, 300-318, 340-398.....	34	21	13	13.3	13.1	12.0
Rheumatic fever, 400-402.....	4	2	2	1.6	0.4	2.8
Diseases of the heart, 410-443.....	687	436	251	269.5	255.7	265.2
Diseases of the arteries, 450-456.....	28	20	8	11.0	10.3	10.0
Other diseases of the circulatory system, 444-447, 460-468.....	31	15	16	12.2	13.9	10.4
Influenza, 480-483.....	11	3	8	4.3	5.9	5.6
Pneumonia, 490-493.....	68	38	30	26.7	34.9	34.4
Bronchitis, 500-502.....	1		1	0.4	0.8	1.2
Appendicitis, 550-553.....	4	2	2	1.6	1.2	3.6
Intestinal obstruction and hernia, 560, 561, 570.....	13	10	3	5.1	8.7	5.6
Gastro-enteritis and colitis (under 2) 571.0, 764.....	22	7	15	8.6	5.5	4.8
Cirrhosis of liver, 581.....	11	8	3	4.3	4.0	6.8
Diseases of pregnancy and childbirth, 640-689.....	6	2	4	8.9	9.7	25.9
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684.....	1	1		1.5	1.4	4.3
Congenital malformations, 750-759.....	25	19	6	3.8	3.0	4.3
Accidental deaths, total, 800-962.....	193	117	76	75.7	69.8	69.5
Motor vehicle accidents, 810-835, 960.....	80	56	24	31.4	29.7	28.4
All other defined causes.....	370	188	182	145.2	140.3	161.0
Ill-defined and unknown causes, 780, 793, 795.....	109	39	70	42.8	48.8	49.5

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the November report of the years specified.

**Not comparable or not available.

†Excluding Hodgkins' disease (201); leukemia, aleukemia (204) and mycosis fungoides (205).

BOOK ABSTRACTS AND REVIEWS

Textbook of Refraction. By Edwin Forbes Tait, M. D., Ph. D., Associate Professor of Ophthalmology, Temple University School of Medicine; Attending Surgeon (Ophthalmology), Temple University and Montgomery Hospitals; Fellow, Philadelphia College of Physicians, and American Academy of Ophthalmology and Otolaryngology; Member, The Pan-American Association of Ophthalmology, and The Association for Research in Ophthalmology. First edition. Cloth. Price, \$8.00. Pp. 418. Philadelphia and London: W. B. Saunders Company, 1951.

In this volume, Dr. Tait has presented the subject of refraction in a very interesting manner. It assumes, on the part of the reader, an acquaintance with certain phases of refraction work; however, it is designed for both student and practitioner. The material is so arranged that the first few chapters are devoted to a more or less introductory presentation of concepts that are discussed in greater detail further on in the book. The interpretation of vision is classified and given in a clear concise manner; visual acuity and visual efficiency are discussed; lens characteristics are reviewed. Anomalies and variations of accommodation are discussed and the significance of various findings is stated very clearly. There are brief and pertinent remarks about the different types of refractive errors, the use of bifocals in young individuals, and also methods of dealing with problems of subnormal vision. Recommendations are made concerning lighting conditions as related to visual tasks. A chapter is devoted to the consideration of the factors involved in binocular coordination. In the chapters dealing with ocular muscle anomalies, there are some notes on the anatomy and physiology of the extra-ocular muscles, and the relationship of ocular muscle anomalies is stated in a very lucid manner. A newer concept in the principles and methods in heterophoria is presented.

In the chapter dealing with the methods of refraction, keratometry and skiascopy, both static and dynamic, are discussed, the author presenting some original techniques. In the last chapter, there is presented a system of refraction with interpretation and correlation of data that can be used profitably as a model by all those attempting to do thorough refraction work.

There are a good bibliography and adequate index. This volume should be of interest and help to all those doing refraction work.

Daniel S. Hagood, M. D.

Regional Orthopedic Surgery. By Paul C. Colonna, M. D., Professor of Orthopedic Surgery, University of Pennsylvania School of Medicine. Cloth. Price, \$11.50. Pp. 706, with 474 figures.

Philadelphia and London: W. B. Saunders Company, 1950.

With a background of many years of practice and teaching, the author is well qualified for disturbing the tradition of orthopedic textbook writing. In this presentation of Regional Orthopedic Surgery a much needed change has taken place which brings to the student, general practitioner, and specialist a composite survey of the area in which he may be interested. In studying or in developing a differential diagnosis, his work has been facilitated; no longer need be read several pages in many parts of a book to establish a background for further bibliographic and monographic investigation.

The entire subject of orthopedic surgery has been adequately covered in basic fact. Especially good are the chapters on Physiology of Bone, Orthopedic Examinations, General Pathology of Bones and Joints, Spine and Thorax, Hips and Pelvic Ring, Foot and Ankle, Neuromuscular Disabilities (an excellent brief survey), Principles of Apparatus (traction, plaster of paris, and brace technique), and Physical Medicine.

As in all medicine, opinions differ according to experiences with some methods of therapy. It must be remembered, however, that this is a basic book and Dr. Colonna admits in the preface that the contents are "inflections of (his) personal experience." Therefore "to each his own," but let there be a basic guidance!

Dr. Colonna needs no introduction to the profession. He has earned his place among the leaders in orthopedic surgery. Congratulations go to him for his epochal approach to an old problem. For medical libraries, libraries of schools of nursing, for the student, resident, general surgeon, general practitioner, and orthopedic surgeon, this volume is an invaluable asset.

Elias N. Kaiser, M. D.

From a Doctor's Heart. By Eugene F. Snyder, M. D. With a foreword by Paul Dudley White, M. D. Cloth. Price, \$3.75. Pp. 251, illustrated with drawings. New York: Philosophical Library, 1951.

For years Dr. Snyder realized that he was working too hard. From time to time he could tell from his feelings and his heavy schedule that he needed rest as much as many of the patients whom he kept urging to get out from under their burdens. A refugee in this free land from, first, the terror of the czar and the Communists in his native Russia and later the Hitlerian tyranny in Czechoslovakia, he had no desire to bring still another dark shadow over his life—the shadow of a physical breakdown. However, like many

an Alabama man of medicine, he could not find a time when he could in good conscience leave his patients and take a real vacation. But at last he did make the break. On March 18, 1949, he set out with his family for a two-week trip to Miami Beach. There he would rest and rest and rest. Then he would return to his office and his practice with new reserves of strength, a new outlook and a mind full of pleasant memories.

But he never got to Miami Beach, at least not then. As his train was pulling out of the New Haven station, he felt "a prolonged pain beneath my breast-bone, shooting to my neck and both arms with a sensation of great pressure on my chest." Upon arrival at Grand Central Station, in New York, he was taken to the first-aid room in that city-within-a-city. There he received an injection of morphine. Then he was carried to one of the big city's hospitals, where both he and his wife, also a physician, had served as externes soon after their arrival in the United States about a decade earlier.

From then on Dr. Snyder learned more about heart disease than he had ever known before. He had studied it at great length in Old World medical schools and in the revealing sounds that poured from the tubes of his stethoscope. But now he was living with it. It was constantly with him. It was verily his life. Its ally death was never far away. He found out as much about how a rebellious heart affects a patient as he had learned during all those years about what it meant to a doctor. His close comradeship with death, too, brought thoughts and reactions he had never known before. And out of that comradeship came a sort of friendship. Death lost much of its forbidding aspect for him. He wanted to live, oh so much. But death would not be such a bad thing, if it had to come.

During the weeks that followed those sharp pain-pulsings to the neck and arms, he thought much about the disease that had laid him low. He reviewed in his mind what he had learned about it as a medical student and practitioner. He discussed with his family the new outlook upon life which his illness had given him. With one or two other doctors whom he met in the hospital and whose friendship fruited rapidly under the warming sun of forced idleness, he reached certain conclusions regarding the problem of heart disease. These he sets forth in this volume.

Dr. Snyder's philosophy is essentially a philosophy of optimism. If you have had a heart attack, you do not need to resign yourself to unbroken idleness and uselessness. There is plenty of good and valuable work which you can do, and do safely. But you should—you must—realize that there is a limit to your physical strength. You cannot draw recklessly upon your reserves of energy. You have to keep always in mind the solemn, though not necessarily sad, truth that you have a damaged heart.

From *A Doctor's Heart* is intended primarily for the layman who may or may not have heart disease. But many a doctor could read it with considerable profit. And those who do will find it interesting, as well as a trifle sobering.

John M. Gibson.

Management of Fractures, Dislocations and Sprains. By John Albert Key, B. S., M. D., and H. Earle Conwell, M. D., F. A. C. S. Fifth edition. Cloth. Price, \$16.00. Pp. 1232, with 1195 illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1951.

Physicians interested in trauma have witnessed, in the past five years, a radical change in the treatment of fractures. This field of bone injury has been deluged with torrents of literature, an overlay of gadget production, and modification of modifications in new appliance creation. Such a rush inertia to radicalism must, of necessity, rebound to the neutral normalcy. The need of modernization of fracture therapy on a pure basic principle is unquestionable. How timely, then, is this new addition of fractures, sprains and dislocations by Doctors Key and Conwell. Their contribution to the orthopedic literature is the essence of biblical truth and pure reasoning; it has been reborn with a background of many years experience to further salvage and perpetuate the soundness in the new material applicable to its field of interest.

This book is readable and it is profusely illustrated with clear-cut photographs adequately enhanced with legend. The entire text has been thoroughly revised. Treatment of fracture of the spine and its complications, chemotherapy in fractures, and hip joint and knee joint fractures have been brought up to date. Compound fractures and war wounds have been reinvestigated and brought to a timely balance. Much could be related about the content of each chapter in this book but this would entail repetitious indications that all the material has been given a thorough over-hauling.

Doctors Key and Conwell need no introduction. They have emblazoned a path to a well-earned reputable peak of accomplishment in the hearts and minds of orthopedic and traumatic surgeons for generations to come. The names of Key and Conwell shall be the guide to good fracture therapy.

The publishers also must be mentioned in commendation for presenting a volume containing a thorough coverage of fracture therapy in such a readable, compact edition.

A revered place in every physician's library should be reserved for this excellent addition for ready reference.

Elias N. Kaiser, M. D.

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DIAGNOSIS AND TREATMENT OF COMMON LEUKORRHEAS

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and

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Birmingham, Alabama

It is interesting to notice the change that has taken place in the classification of leukorrheas. Not too many years ago they were divided into gonorrheal and non-gonorrheal. During the past twenty years better methods of diagnosis have shown that many of the vaginal discharges formerly classified as gonorrhea are due to other causes, especially trichomoniasis. Rapid, efficient treatment with antibiotics and chemotherapy has reduced many of the difficulties of previous therapy.

There is always a certain amount of normal vaginal discharge present, which is a mixture of cervical mucus and desquamating vaginal epithelium. It keeps the genitals moist but rarely soils the underwear. This discharge is acid, having a pH between 4.5 and 6.5, being maintained by the action of the Döderlein bacillus on the glycogen-containing desquamated vaginal epithelium to form lactic acid. This acid condition protects the vagina and other genital organs from harmful bacteria. Indiscriminate frequent douching removes this protection for varying periods of time, allowing harmful bacteria or parasites to gain a foothold.

A normal vaginal discharge rarely causes any unpleasant symptoms. When abnormal symptoms do occur, an investigation should be made to determine the cause so that correction can be undertaken. There are certain times of the cycle that the normal dis-

charge may be more abundant. This is most noticeable at the time of ovulation, when the cervical mucus becomes profuse and watery.

Abnormal vaginal discharges may be profuse, foul smelling, bloody, irritating or pruritic. A discharge characterized by any of the above symptoms should be investigated carefully before therapy is started, because success of treatment often depends on the etiology of the discharge being known.

Abnormal leukorrheas are usually divided for classification into five major groups.

TYPES OF ABNORMAL LEUKORRHEAS

Trichomonas Vaginalis Vaginitis

One of the most disturbing events that can happen to a woman, especially young and single, is to develop a profuse, yellowish, irritating vaginal discharge. This may develop quickly within a few days following a menstrual period. It may be erroneously called gonorrhea by a physician unless simple diagnostic methods are employed to show the presence of trichomonas.

This organism known as *Trichomonas vaginalis* is a motile, parasitic, flagellated protozoan discovered by Donne' in 1837. However, it was not until 1928 that an article by Greenhill stimulated interest in this disease.¹

From the Department of Gynecology, Medical College of Alabama.

1. Greenhill, J. P.: Am. J. Obst. & Gynec. 16: 870-880 (Dec.) 1928.

The clinical picture of an acute case is characterized by a profuse, odorous discharge associated with a burning, itching sensation in the vagina and on the vulva. The introitus and vagina are usually red, with the vault and cervix having a flea bitten or strawberry appearance. There may be associated tenderness in both lower quadrants. This may be due to the trichomonas, but is more likely due to a secondary, low grade bacterial invasion of short chained streptococci, with lymphatic spread into the broad ligaments. This tenderness usually disappears after several days of treatment.

The chronic, untreated cases may persist for many years, with infrequent symptoms except during and for a few days following the menstrual period. Menstrual blood and secretions are alkaline, making an ideal growth medium for the trichomonas. There is a subsequent increase of symptoms at that time. The best time to look for trichomonas is during the acute phase or immediately after a menstrual period. The usual stained smear is of no value in searching for trichomonas as the immobile forms are difficult to distinguish from a pus cell. A few drops of vaginal secretion, diluted with an equal part of water or saline, placed on a glass slide, and a cover slip placed over the drop, will serve best if immediately examined for motile trichomonas. These parasites are about twice the size of a pus cell, with their activity being caused by rapid movements of four flagella. In chronic cases very careful and repeated search must be made. The patient should refrain from douching for at least five to ten days and the best time to search is immediately after a menstrual period.

The actual manner of transmission of this parasite is unknown. It is not thought to enter a cystic or spore stage. The almost universal idea of contamination from the intestinal tract has recently been looked upon with disfavor due to a number of experiments showing that *T. intestinalis* or *T. buccalis* could not be implanted and grown in the vagina. Some think that this organism may be transmitted by the use of dirty towels, clothes, douche nozzles, toilet seats, unclean bath tubs, or by bathing in warm water lakes in the summertime where trichomonas abound.

Until recently trichomoniasis has been

thought of exclusively as a female disease. Dr. Gordon G. Allison, a urologist of Atlanta, Georgia, has made a thorough study of the problem in the male.² In 500 male patients complaining of urethral discharge, fifteen per cent were found to be due to trichomonas. A specially stained smear is necessary to diagnose the organism in the male as the acid urine quickly kills the trichomonas in the wet drop preparation. Therefore, trichomonas may be transferred by coitus, and the husband should be examined in the persistent recurring infestation.

Treatment for trichomonas is legion and therefore none is perfect. The organism is vulnerable to many agents, with the majority being killed immediately. If all organisms are not killed, the treatment will not be a complete cure. It is difficult to say where these residual foci are. Stripping of the urethra may empty a drop or two of secretion from Skene's glands, and on examination trichomonas may be found. Probably the racemose glands of the cervix harbor foci of the parasites. In some cases reinfection may occur from the husband. Allen and Butler recently suggested the bladder and urethra as sources of reinfection.³ By collecting the last few drops of catheterized urine, centrifuging and with immediate microscopic examination, they were able to demonstrate trichomonas in quite a number of resistant cases.

Since so many different methods of treatment have been advocated by those writing on trichomonas infestations, only the methods used by us will be described. This consists essentially of daily hot vinegar douches taken in the reclining position to remove the discharge, promote vaginal mucosal healing, and decrease pelvic congestion. At bedtime an applicator full of vaginal jelly* or a suppository† is inserted into the posterior vagina. This treatment is continued daily for three to four weeks. For the following six to eight months the above therapy should be used after each menstrual peri-

2. Allison, G. G.: South. M. J. 36: 831, 1943.

3. Allen, E., and Butler, S.: Am. J. Obst. & Gynec. 51: 387, 1946.

*AVC (improved) vaginal jelly (National Drug Co.).

Nylmerate jelly (Holland-Rantos Co.).

†Floraquin suppository (Searle).

od for a week or ten days to prevent any recurrence or exacerbation of the infestation.

Monilia Vulvovaginitis

In 1931 Plass and his co-workers published an article which brought attention to the fact that a yeast-like fungus, *Monilia albicans*, was another cause of vaginal discharge and irritations.⁴ Although yeast-like organisms in vaginal discharges were reported in the British Lancet as far back as 1840, it remained for Plass' work to stimulate present day interest.

Monilia albicans is most commonly found in pregnant women and in diabetes. It is probably never found in the normal prepubertal girl and rarely in the postmenopausal woman.

In all cases of monilia vulvovaginitis a blood sugar determination should be run two hours after a normal meal to check for elevated blood sugar. Values above 190 milligrams per cent are suggestive of diabetes. Checking the urine for sugar two hours after each meal for three or four days may reveal spillage of sugar in the urine as a cause of the yeast.

Many varieties of yeast are found in nature but only the *Monilia (Candida) albicans* and *stellatoidae* produce vaginal symptoms. In ninety per cent of the cases studied by one group, *Monilia albicans* was found to be the causative fungus.⁵ The monilia type fungus can be identified by its production of mycelia as well as conidia.

The primary symptom is itching, which may be intense at times. Soreness and irritation of the vulva are frequent complaints. The most frequent findings on examination are a white, starchy, flaky, scant vaginal discharge and a dusky hyperemia of the vulva and vagina. Some patients show evidence of excoriations and thickening about the vulva from scratching.

The diagnosis of *Monilia albicans* is not easy. It may be suspected when the patient states that she has a small amount of vaginal discharge, with varying intensities of itch-

ing, just before the menstrual period begins and is relieved soon after the flow starts.

Although the history may be suggestive, yeast should be searched for in a vaginal drop preparation similar to that used to diagnose trichomonas. Only by finding the branching forms or mycelia growing from sheets of desquamated vaginal cells can monilia be diagnosed. If monilia is not found in the vaginal drop preparation, a small amount of the vaginal secretions may be cultured in saline for 24-48 hours at room temperature and a search then made for the branching mycelia.

Treatment is often unsatisfactory in this type of vaginitis. The time honored remedy is local application of one per cent aqueous gentian violet. This is so messy that other types of medication have been sought. A very satisfactory method of handling proven monilia cases has been the use of AVC* (improved) vaginal jelly inserted each night before retiring into the posterior vaginal fornix, with additional cream rubbed over the external genitalia every time the patient urinates or defecates during the day. This treatment should be continued for three or four weeks, during which time douching should be refrained from or kept at a minimum. If the yeast does not respond to the above treatment or recurrence occurs, mild diabetes or pregnancy should be suspected. When monilia vulvovaginitis occurs during a pregnancy, more or less continuous or repeated treatment will be necessary until the patient delivers, after which relief usually occurs.

Chronic Non-Specific Infections of the Cervix

Perhaps the most common causes of abnormal leukorrhea are chronic non-specific infections of the cervix occurring for the most part following childbirth or instrumentation of the cervix. Since this type of lesion is relatively asymptomatic, except for a profuse mucopurulent discharge, many patients pay little attention other than to take a cleansing douche. Douches, vaginal jellies or suppositories have little effect on these deep seated infections of the racemose cervical glands.

4. Plass, E. D.; Hesseltine, H. C., and Burts, H.: Am. J. Obst. & Gynec. 21: 320, 1931.

5. Carter, B.; Jones, C. P.; Ross, R. A., and Thomas, W. L.: Am. J. Obst. & Gynec. 39: 213, 1940.

*AVC (improved) vaginal jelly (National Drug Co.).

The infected area is about the external os of the cervix at the level of the squamo-columnar epithelial junction. The cervix is often hypertrophied, eroded, and everted and has many nabothian cysts present. Since cancer of the cervix can occur at any age, it is desirable to be on the look out for it always. Even in the young woman with an infected cervix it would be wise to have tissue specimens removed by biopsy and examined for early carcinoma. It has been our policy to take multiple specimens from this area of the cervix with Gaylor biopsy forceps so that the end result was removal of the entire squamo-columnar epithelial junction. Due to excessive bleeding that often occurs in these infected cervices, a Tampax† with its tip soaked in Monsell's solution is placed against the bleeding cervix and the speculum removed. This solution coagulates the blood and tissue at the point of contact, thus preventing any excessive bleeding. The Tampax is removed in twenty four hours by the patient. When the patient returns in three or four weeks many of these cervices have almost completely healed by only the above procedure. Those that show some remaining evidence of infection may be treated by light application of the cautery tip.

Gonorrhea

This is seldom recognized as an infection involving the lower genital tract and therefore leukorrhea from this cause is not common. Clinically the most common form of gonorrheal infection is after the infection has involved the adnexal structures and pelvic peritoneum. Smears of acute cervical, Skene's or Bartholin gland lesions should be made but are often disappointing. Treatment of gonorrhea is simplified since the advent of chemotherapy and antibiotics.

Senile Vaginitis

This is a non-specific infection of the vagina due to marked mucosal atrophy following the loss of estrogen after the menopause. Due to the few layers of cells in this atrophied mucosa, bacteria pass through small cracks that easily occur and may cause infection with a vaginal discharge and soreness as the principal symptoms. Local treat-

ment of the vaginal mucosa with warm water douches and estrogen in small oral doses to stimulate vaginal mucosal cell growth will soon relieve this condition.

SUMMARY

Since abnormal vaginal discharges are always a symptom of some pathologic process, they should be investigated carefully and their cause determined so that proper treatment may be instituted. Douching should not be advised or recommended for a discharge unless first investigated. All discharges that cause itching are abnormal and are usually due to trichomonas or monilia infestation. Any cervical lesion that does not appear normal should be biopsied and studied pathologically before cauterization is begun.

Elective Induction of Labor—In every community there are those of us who do elective inductions of labor and there are those who clamor to rise and take issue with our "streamlined obstetrics." It is our firm conviction that this method of management in the properly selected case is an additional refinement in the practice of obstetrics. In many women fear of childbirth can much more readily be eliminated by this procedure than by their reading a book on the subject. Many obstetrical patients, particularly those living great distances from the hospital, fear the precipitous and unattended labor and delivery of which they not infrequently read on the front pages. Most patients desire and are promised pain relieving medication during labor and this cannot be effectively administered to the patient delivering or about to deliver on admission to the hospital. Often the problem of providing care for small children or of obtaining middle-of-the-night transportation can be obviated by this type of obstetrical care. We do not advocate induction of labor for our own convenience but believe it serves to eliminate the dangers of unattended delivery.

Our requirements for elective induction are quite simple but we attempt to be certain they are fulfilled. The patient must be at or near term as determined by a combination of factors. We, of course, go much by menses but correlate this with the size of the baby, size of the uterus, level of the head and condition of the cervix. The condition of the cervix is our most important consideration in determining which patient shall be electively induced. Though we are satisfied that the baby is mature or even postmature and even though the head is well engaged we do not advocate or practice elective induction in the presence of a long, firm or uneffaced or only slightly dilated cervix. We require in all instances a "ripe" cervix, which to us means one that is effaced and two fingers or more dilated. We require that a nulliparous cervix be nearer ready for delivery than a multiparous one.—*Solomon and Starr, South. M. J., April '52.*

†Tampax for this study furnished by Tampax, Inc., Palmer, Mass.

AN INTERESTING CASE OF HERMAPHRODITISM

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The patient, Miss R. M. R., age 17, was brought to my office by her mother on December 12, 1951. The symptoms and findings were characteristic of appendicitis, being a temperature of 99°, nausea and vomiting; a tender, rigid, and painful right lower quadrant, a white blood cell count of 14,200, of which 82% were polymorphs; negative urine, and a history of several such attacks.

The mother stated that the patient had never menstruated. A pelvic examination revealed a vagina of normal size, but no cervix nor uterus could be palpated or seen. There was no history of surgery and no abdominal scars were seen.

She was sent to the Colbert County Hospital, and an operation was performed the next morning. A midline incision was used. The appendix was removed and the stump inverted, using no ligature other than the inversion suture. The pelvis was then explored, and no uterus was found. The organs which occupied the usual position of ovaries were firm and did not feel or appear like normal ovaries. Very small fallopian tubes with fimbriated ends were present, but they were not more than 1 cm. in length and were closed at the medial ends as if they had been sectioned and ligated.

Dr. R. D. Wright, who was assisting me, felt, as I did, that the ovaries appeared so abnormal that a section should be taken for pathological examination. This was done, removing a rather large section of the medullary portion from the right one, and then resuturing the cortical portion. Following is the report of our pathologist, Dr. C. C. Randall of Vanderbilt University Hospital.

Gross: The specimen consists of a firm mass, measuring 3 cm. in diameter; sections show creamy-white tissue. There is also an irregular pink-gray mass measuring 4 x 2 x 2 cm. Sections show many small, white yellow nodules. A 7 cm. infected appendix is also present.

Microscopic: The sections of the appendix show marked chronic and acute inflammation with heavy infiltration by lymphocytes, monocytes, eosinophiles and neutrophils. The supposed section of ovary is composed of trabeculated lobulated tissue with myriads of glands and a tubular structure resembling seminiferous tubules of the testis. The cells show considerable regularity

and some pseudo-palisading. The connective tissue between these tubular structures is quite variable in thickness, and sometimes there are conspicuous numbers of cells resembling the interstitial cell. The whole process appears benign, and the mass represents testicle rather than ovary.

Diagnosis: Rudimentary testicle. Acute and chronic appendicitis. Hermaphroditism.

In the light of this very interesting finding the patient was reexamined. The external genitalia and vagina seemed entirely normal. The secondary sexual characteristics, likewise, appeared to be entirely female. She had rather large, well-developed breasts and is distinctly feminine in her appearance, attitudes, and actions.

That testicular tissue is present had been proved by the microscopic examination of the pathologist. Her complete development of female secondary sexual characteristics was equally convincing on the grounds of endocrine function that she has functional ovarian tissue. She is, therefore, an example of true hermaphroditism, having both testis and ovary. In hermaphroditism, functional competency of both kinds of sex glands does not exist, and in this patient the ovaries seemed to be the functional gland. Authentic cases have been reported both with combined ovotestis¹ (in which the cortical portion of the gonad is ovarian, and the medullary portion is testicular, a relic of the normal embryonic condition) and with separate ovary and testis.² Since the sections examined by the pathologist contained none of the cortex of the gonad, it is possible that the patient has ovotestes, or she may represent a case of separate ovary and testis.

Dr. Myron J. Welty, a local physician, became interested in this case and wrote for information to the librarian of the Medical College of Alabama. The reference librarian, Eleanor Boykin Lanier, searched the literature back to 1945 and found only one review of congenital absence of the uterus.

1. Kwartin, B., and Hyams, J. A.: J. Urol. 18: 363-383, 1927.

2. Young, H. H.: Chapter 9 in Practice of Urology, W. B. Saunders Company, Philadelphia, 1926.

This article³ reported that in the period of 1900 through 1949 there were published 80 cases of congenital absence of the uterus, and the author reports one additional case. I have no compilation of reported cases of true and false hermaphroditism.

SUMMARY

This is the case of a 17-year-old, white female who was brought to my office by an attack of appendicitis. Pelvic examination

3. Forget, U.: *Union med. du Canada* 79: 1448-1449 (Dec.) 1950.

revealed the absence of the cervix and, seemingly, also of the fundus of the uterus. Incidental to appendectomy, the complete absence of the uterus was confirmed. Sections of the supposed ovary, which were taken because of its abnormal appearance, proved to be testicle. The complete development of female secondary sexual characteristics is conclusive evidence that functional ovarian tissue is also present and is dominant over the testicular tissue. Diagnosis: True hermaphroditism with the functional dominance of female sex glands; congenital absence of the uterus.

THE BENZODIOXANE TEST FOR PHEOCHROMOCYTOMA

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and

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It has been three and one-half years since Goldenberg and his associates described the use of benzodioxane (piperidylmethyl benzodioxane)* as a pharmacologic test for the presence of pheochromocytoma.¹ At that time the test was heralded as a reliable, safe, essentially non-toxic screening test for hypertensive patients. In the ensuing years it has been found not to be 100 per cent accurate, has shown certain side effects which are occasionally alarming, and has not quite lived up to initial expectations. Nevertheless, it remains one of the best tests we have for the presence of epinephrine (and norepinephrine) secreting tumors in sustained hypertensive patients. In this article we will attempt to review the literature's clinical experience with the test and present the limited experience we have had with it.

Piperidylmethyl benzodioxane (933F) is one of the series of benzodioxanes original-

ly investigated by Fourneau and Bovet.² To explain the action of the dioxanes Rosenbluth and Cannon³ suggested that they increase the polarization, and decrease the permeability of smooth muscle, blocking the passage of epinephrine. Morison and Lissak demonstrated the in vitro inhibition of epinephrine by 933F.⁴ Today, most investigators seem to accept the work of Seed and McKay as an explanation for the adrenolytic action of benzodioxane.⁵ The authors started with the thesis of Nickerson and Goodman, stating that the action of Dibenamine is probably due to a combination of a certain fraction of Dibenamine with adrenergic receptor substance and that this combina-

2. Fourneau, E., and Bovet, D.: *Recherches sur l'action sympathicolytique d'un nouveau derive du dioxane*, *Arch. internat. de pharmacodyn et de thesop.* 46: 178 (Oct. 15) 1933.

3. Rosenbluth, A., and Cannon, W. B.: Adequacy of chemical theory of smooth muscle excitation, *Am. J. Physiol.* 116: 414 (July) 1936.

4. Morison, R. S., and Lissak, K.: Observations on the mode of action of piperidinomethyl benzodioxane (933F), *Am. J. Physiol.* 123: 404, 1938.

5. Seed, J. C., and McKay, E. A.: Inhibition by piperidinomethyl-3-benzodioxane (933F) of epinephrine vasopressor blockage produced by dibenzyl-3-chlorethylamine, *Proc. Soc. Exp. Biol. and Med.* 70: 724 (April) 1949.

From the Department of Medicine, Medical College of Alabama.

*Piperidylmethyl benzodioxane (933F) was supplied through the courtesy of Merck and Company, Rahway, New Jersey.

1. Goldenberg, M.; Snyder, C. H., and Arsnow, H., Jr.: New test for hypertension due to circulating epinephrine, *J. A. M. A.* 135: 971 (Dec. 13) 1947.

tion is irreversible.⁶ The remainder of the compound becomes physiologically inert within one hour after administration. Seed and McKay reasoned that "if during this first hour the epinephrine receptors are occupied by a compound which blocks reversibly the action of epinephrine, Dibenamine should be unable to combine with the receptors, and on removal of the reversibly blocking compound, epinephrine should give a normal pressor response." The authors present experimental data demonstrating that 933F is just such a reversibly blocking agent.

Repeated experimentation has shown that 933F will inhibit the pressor and most of the other effects of epinephrine and norepinephrine in anesthetized animals. It will not inhibit the epinephrine induced tachycardia. In small doses it is adrenolytic, but in doses greater than 10 milligrams per kilo in the dog it becomes sympatholytic. Epinephrine blockade can be demonstrated in the dog with one-fortieth to one-eightieth of this dose.¹ Drill cites experiments on the non-anesthetized animal in which the administration of 933F causes such side reactions as central nervous system stimulation, hypertension and tachycardia, actions not seen in the anesthetized animal.⁷ He claims these actions are caused by a sympathomimetic action of 933F, and thus alludes to the side reactions seen in hypertensive patients. In the human subject 933F has been shown to inhibit the hypertension induced by intravenous administration of norepinephrine and epinephrine.⁸

The Benzodioxane Test

The test as we have done it, and as reported by most investigators, follows the general principles originally proposed by Goldenberg et al. and briefly is as follows:¹ An intravenous infusion of 5 per cent glucose in distilled water is started. A three way stop cock is introduced between the intravenous

needle and the infusion tubing. A base line blood pressure record is obtained over a 15 to 20 minute period, during which approximately three readings at five minute intervals and four readings at one minute intervals are taken. At the end of this period a syringe containing the benzodioxane is inserted into the three way stop cock and the benzodioxane is injected over a two minute interval in a dosage of 10 milligrams per square meter of body surface. Blood pressure readings are taken at minute intervals until the blood pressure has returned to previous base line level. This usually occurs within 15 to 20 minutes. No sedation should be used prior to the test. At present benzodioxane (933F) is marketed under the proprietary name of Benodaine,* in ten milliliter ampules containing 2 milligrams per milliliter. A pamphlet which contains a nomogram to aid in determining dosage accompanies each ampule.

The interpretation of the blood pressure response to the 933F is usually not difficult. Goldenberg and his associates interpret the tests by plotting the blood pressure curves against time on squared paper.¹ The pre-injection readings being used as reference lines, areas between them and the blood pressure curves after injection are estimated either by counting squares or using a planimeter. The areas above the line are positive, those below are negative. The final value is then expressed as the algebraic sum of these areas in millimeter minutes. This is an excellent method for borderline responses, but the usual test can be interpreted by inspection. Any test which exhibits a prompt depressor response for a significant period of time (arbitrarily, more than three minutes) should be considered positive until proven otherwise by further evidence. It is not necessary to expect the blood pressure to fall to normal levels to be considered a depressor response. A response is labeled depressor with reference to the base line blood pressure. A negative response is any response other than depressor.

Calkins et al. note that, after preliminary experience with the test as noted, they obtained satisfactory results by giving all adults 20 milligrams of 933F in 2 milliliters of isotonic saline directly intravenously over a two-minute interval, providing the pa-

6. Nickerson, M., and Goodman, L. S.: Adrenergic blockade with special reference to dibenamine, *Federation Proc.* 7: 397, 1948.

7. Drill, V.: Reactions from the use of benzodioxane in diagnosis of pheochromocytoma. *New England J. Med.* 241: 777 (Nov. 17) 1949.

8. Goldenberg, M., and Aranow, H., Jr.: Diagnosis of pheochromocytoma by the adrenergic blocking action of benzodioxane, *J. A. M. A.* 143: 1139 (July 29) 1950.

*Merck and Company, Rahway, New Jersey.

tients were rested until the blood pressure had stabilized.⁹ They continued to calculate dosage for children on the basis of 10 milligrams per square meter of body surface. We have performed the tests several times in this manner and find it quite satisfactory. By doing away with the intravenous infusion, the test becomes more practical as an office procedure.

Over half of the negative responses are pressor. The rest show little or no response, or are biphasic. Table 1 shows the percentage of each type of response in 36 hypertensive patients falling into the categories of essential, renal, and malignant hypertension. One case, a 15 year old colored male, our only depressor response, was proven at surgery to have a pheochromocytoma which was removed successfully. This case has been reported elsewhere.¹⁰ For comparison, the percentage of responses obtained by Wilkins et al. is included in Table 1.¹¹

Table 1*

	No. of Pa- tients	% of Pa- tients	No. of Pa- tients	% of Pa- tients
Pressor Response	19	52.8	45	60.0
Depressor Response	1	2.7	1	1.3
Diphasic Response	7	19.4	17	22.6
Little or No Response	9	25.0	12	16.0

*Wilkins et al.

Figure 1 shows a representative blood pressure graph in each category of response.

False-Positive Tests

To date, no unequivocal false-positive responses have been reported. Taliaferro et al. report a case diagnosed antemortem as

9. Calkins, E.; Dana, G. W.; Seed, J. C., and Howard, J. E.: On piperidylmethyl-benzodioxane (933F), hypertension and pheochromocytoma, J. Clin. Endocrinol. 10: 1 (Jan.) 1950.

10. Koffler, I.; Buck, G.; Wingard, C.; Hitchcock, P.; Guthrie, R., and Teague, R. S.: A case of pheochromocytoma: Diagnosis by the benzodioxane test, urinary hormone studies and norepinephrine assay of the tumor, J. Clin. Endocrinol. 10: 897 (Aug.) 1950.

11. Wilkins, R. W.; Green, W. E. R.; Culbertson, J. W.; Holperin, M. H.; Litter, J.; Burnett, C. H., and Smithwick, R. H.: Extensive laboratory studies of a patient with pheochromocytoma before and after successful operation, Arch. Int. Med. 86: 51 (July) 1950.

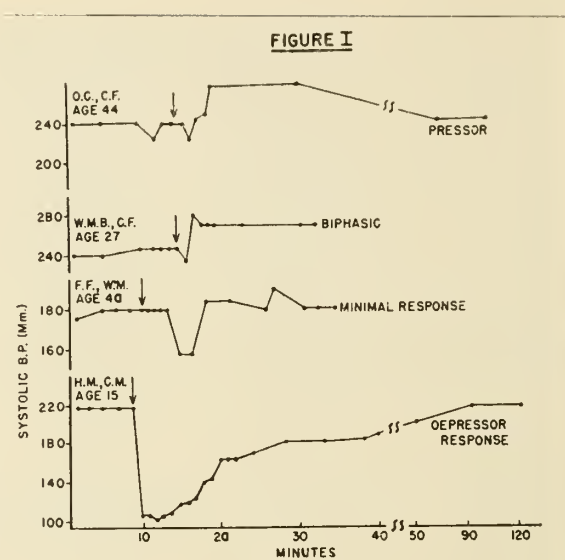


FIG. 1. Examples of each type of systolic blood pressure response to the Benzodioxane test. The 3 upper lines show negative responses, in O.C. (malignant hypertension), in W.M.B. (renal hypertension), in F.F. (essential hypertension), and H.M. shows a depressor or positive response. At the arrows, Benzodioxane (10 mg. per square meter of body surface) was injected intravenously over a 2-minute period

renal hypertension in which an initial benzodioxane test was positive.¹² Two subsequent tests showed progressive reversal to a negative pattern. The patient died at home with no postmortem examination being done. Goldenberg et al. consider the diagnosis open to question.⁸ Soffer reports a false-positive test in a 57-year-old white female who was comatose at the time of the test.¹³ The patient died two days later. At autopsy no adrenal tumor was found. It is known that premedication with sedatives may cause a false-positive test. Whether coma functions in a like manner is not yet determined.

Despite this case, and considering that thousands of tests have been performed here and in Great Britain without a similar incident reported, we feel it safe to assume that a positive benzodioxane test is irrefutable evidence of the presence of an epinephrine and norepinephrine secreting tumor.

12. Taliaferro, I.; Adams, R. A., and Haag, H. B.: Benzodioxane test, J. A. M. A. 142: 408 (Feb. 11) 1950.

13. Soffer, Alfred: False-positive benzodioxane reaction to piperoxan hydrochloride test for pheochromocytoma, J. A. M. A. 148: 538 (Feb. 16) 1952.

False Negative Tests

A total of seven false negative tests have been reported. Roth and Kvale report two false negatives in patients with proven pheochromocytoma, but give no details concerning the cases.¹⁴ Goldenberg et al. report three cases, one being their own, and two cases reported to them personally by Pickering and Howard.⁸ The last two cases were reported recently by Calkins et al.¹⁵

Mason reports two cases in which false-negative benzodioxane tests were recorded and in whom a pheochromocytoma was removed in each case at surgery.¹⁶ However, on one of these cases benzodioxane was successful in blocking the pressor response in a histamine test, and in the second case it abruptly terminated the paroxysmal hypertension induced by histamine. It appears from the evidence presented that these results could not be considered unequivocally negative.

Side Reactions and Toxicity

In our experience with the test we have noted no serious toxicity. We have had three marked pressor responses, one of which is shown in Figure 2. Practically all patients

exhibit a tachycardia of varying degree, none has been excessively rapid, and none continued more than five minutes. Three patients manifested significant side reactions. One complained of tingling and numbness. Another had severe nausea, nervousness and twitching, continuing for one hour post-injection. The third patient complained of feeling cold and exhibited a transient generalized tremor. On direct questioning, all patients are aware of something happening to them, but usually do not present specific complaints. Investigators have reported such side reactions as extrasystoles, nausea, vomiting, flushing, sighing respiration, giddiness, severe anxiety, headache, and others. Wilkins et al. report as high as eight per cent severe side reactions in their series, which is the highest percentage noted in the literature. Alarming pressor responses have been frequently reported.^{7, 11} One case of encephalopathy supposedly induced by 933F is reported, but the patient had had similar attacks prior to the test.¹⁷ In one of Drill's cases of marked pressor response, anginal pain was produced during the test.⁷

COMMENT

It is somewhat difficult to understand the existence of false-negative tests in patients who are subsequently proven to have epinephrine-norepinephrine secreting tumors and whose blood pressures return to normal postoperatively. One would think that such a blood pressure is being sustained by these hormones and when a blocking agent such as 933F is injected the pressure would return to normal, or lower, as is always noted under experimental conditions. There is no proven explanation of this paradox as yet, but the following theses have been offered. It is possible that the blood pressure has not returned to normal for at least several weeks after removal of the tumor, implying that a secondary pressor mechanism has been operating in the maintenance of hypertension.^{8, 9} Calkins et al. offer the possibility that in some cases the amount of 933F that can be safely used is not enough to compete successfully with the concentration of epinephrine and norepinephrine being constantly secreted by some tumors.¹⁵

Of course, the significant side reactions

17. Green, D. M., and Peterson, E. M.: Encephalopathy after benzodioxane, *J. A. M. A.* 142: 408 (Feb. 11) 1950.

FIGURE II. BENZODIOXANE TEST

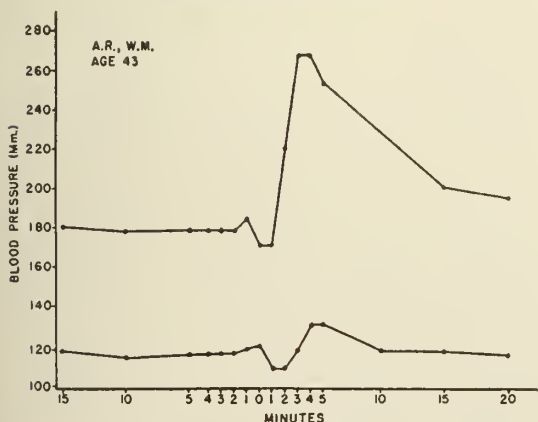


FIG. 2. Example of a marked pressor response. Precipitous blood pressure rise was not accompanied by significant side reactions.

14. Roth, G. M., and Kvale, W. F.: *Mod. Concepts Cardiovas. Dis.* 18: 43 (July) 1949.

15. Calkins, E.; Dana, G. W., and Howard, J. E.: Current methods of diagnosis of pheochromocytoma, *J. A. M. A.* 145: 880 (March 24) 1951.

16. Mason, Robert E.: Pheochromocytoma with false-negative benzodioxane tests, *Am. J. Med.* 11: 524 (October) 1952.

reported by others detract somewhat from the value of benzodioxane as a safe screening agent.¹¹ In our experience we have not encountered side reactions often enough, or severe enough, to deter us from continuing to include the test in the routine work-up of hypertensive patients. No doubt a less toxic agent will be developed in the near future.

SUMMARY

A review of the reported experience on the use of the benzodioxane test is presented.

Observations on the performance of the test on 36 hypertensive patients are reported.

The existence of false-negative tests is noted and their possible etiology discussed.

The benzodioxane test is advocated as a routine procedure in the diagnostic workup of hypertensive patients, but the fact that significant side reactions have been reported should be kept in mind.

PEDIATRIC CASE REPORTS

Edited by
AMOS C. GIPSON, M. D.
Gadsden, Alabama

Case Report by
Benjamin P. Clark, M. D.

This 24 day old white female, B. B. A., was admitted to the Holy Name of Jesus Hospital November 11, 1949 and expired one hour after admission. The history revealed that this child was the product of a normal gestation and her delivery was normal. She was breast fed and appeared to do well until she was about 21 days of age at which time it was noted that she was slightly jaundiced and her abdomen was growing larger. These conditions increased over the next three days and she was admitted to the hospital.

On admission the temperature was 101.6 degrees. The skin and conjunctiva were yellow. The abdomen was grossly distended and the superficial vessels of the anterior abdominal wall were dilated. The abdomen was dull to percussion, and there was a questionable shifting dullness and fluid wave. No organs were palpable. There was no edema of the extremities.

Laboratory studies revealed hemoglobin of 16 grams, a red blood count of 5.5 million,

and a white blood count of 6,050, with 78% neutrophils and 22% lymphocytes. The icterus index was 90 units, with a direct positive Van den Bergh reaction and an indirect reaction of 15 mg. %.

The admission diagnosis was portal obstruction, cause undetermined, and the infant was given Synkamin, 1 cc. As mentioned above, it expired one hour after admission.

Autopsy was done by Dr. J. D. Bush and revealed about 500 cc. of cloudy yellow fluid in the peritoneal cavity. In this fluid were soft yellow masses of material thought to be fibrin. When the portal vein was opened yellow pus could be expressed from this vein by pressure on the liver. This pus was cultured and grew beta hemolytic streptococci and *Pseudomonas aeruginosa*.

Discussion: We have here an infant who would be considered to be in the newborn period who expired from an infection caused by either beta hemolytic streptococcus or *Pseudomonas aeruginosa* or both, marked by jaundice and abdominal distention. This was, no doubt, a blood borne infection which produced little fever but widespread tissue damage. In the newborn period especially, sepsis should always be considered in an infant with jaundice, even though fever be absent. It is possible that an early diagnosis with intensive therapy might have saved this infant.

Renal Malignant Disease—In general the outlook for the patient with renal malignant disease is still discouraging. Results should and can be improved. Earlier recognition is necessary, but it is too often delayed for various reasons. Now and then the tumor fails to manifest itself by symptoms of a recognizable renal nature. Too frequently initial or presenting symptoms are those of metastasis because of the well known tendency for early invasion of venous and lymphatic channels. On the other hand, the true significance of hematuria is not yet generally realized. Again there are physicians who are unwilling to explore surgically when in doubt or who delay unnecessarily in exposing the suspicious kidney. Occasionally, other renal lesions such as stone, chronic inflammation, or cystic disease may mask the neoplasm and confuse an examiner. The radiologist must constantly be on guard under these circumstances. The possibility of malignancy in renal cysts must not be lost sight of. Radiologists have come to realize the importance of films of good technical quality and of repeating an examination when in doubt. None should risk an opinion when visualization of structure is inadequate for any reason. **Experi-**

ence is likely to develop a tumor-conscious attitude in all radiologists.—*Cone, Texas State J. Med., April '52.*

Barbiturates and the Physician—With considerable frequency the daily papers carry stories of suicides committed by means of "sleeping tablets"—almost always barbiturates. This is one of the ways in which the abuse of this group of drugs is brought dramatically to public attention, and it is not strange that occasional demands are heard that the barbiturates be brought under the provisions of the Harrison Act or that their use be otherwise controlled Federally.

The extent to which these drugs are improperly used cannot be well assessed. It is estimated on good authority that no less than three billion doses are sold yearly in this country! Even with all of the cases in which these sedatives are prescribed for convulsive disorders and for occasional insomnia, it takes no vivid imagination to consider an average of 20 doses per man, woman and child as far in excess of medical needs.

Whether the barbiturates are truly addictive in the sense of bringing about such physiologic changes that deprivation causes physical symptoms is perhaps a question of semantics. Certain it is that there are many unstable persons who easily become habituated, and who develop a pathologic dependence on sedative drugs, such as the barbiturates and alcohol, or worse still, a combination of those two. Although many of the neurologic symptoms of barbiturate intoxication, such as tremors and incoordination, tend to be transitory, permanent psychic damage may develop in the habitue', and accidental death from overdosage is all too common.

Most states now require pharmacists to dispense the barbiturate drugs only on a physician's prescription. To apply the Harrison Act to these drugs would make their legitimate use extremely difficult, and it probably is not desirable, at least until other methods of control have been tried and have failed.

The most important factor in the chain of control is the physician himself, and next to him the pharmacist. The physician should be alert to the dangers of barbiturate habituation, and especially to the tricks employed by the habitue'. He should be careful to prescribe only enough for the particular use and try to avoid giving the patient the opportunity to accumulate a large number of tablets or capsules. It is doubtful whether it is desirable to permit refills; indeed it would be much preferable to mark each prescription "not to be refilled." The pharmacist should sell only on a written prescription, and, if a prescription is presented for refilling, he should ascertain from the physician that there is no objection.

The present state of thinking on the part of Federal officials appears to be that the control of traffic in barbiturates is a proper state function, and that by appropriate state legislation, plus the cooperation of physicians, pharmacists, and the pharmaceuticals manufacturers, the use of

these drugs, most useful in their place, can be limited to proper medical use. If, later on, the demand for Federal restriction is renewed, the medical and pharmaceutical professions may perhaps look to their own actions if they would seek to fix the blame.—*Editorial, Med. Ann. District of Columbia, April '52.*

Hysteria—Hysteria occurs chiefly in ignorant, unsophisticated, and suggestible persons. Such persons may link their convulsions with some coincidental but casually insignificant occurrence such as drinking cold water or eating tomatoes. They may then have convulsions following such events. The convulsion is thus precipitated in these instances by the suggestion accepted by the patient. Such a relationship is not found in epilepsy and is diagnostic of hysteria. Somewhat similarly, when a patient predicts the occurrence of a convulsion at a given time and then has a convulsion at the indicated time, we know the convulsion to be hysterical since epileptic convulsions cannot thus be predicted.

Both hysteria and epilepsy may be more frequent around the time of menstruation. Many women show increased tension at this time. Such tension is contributed to by changes in hormonal activities, changes in tissue fluids, and alterations in the psychic state with the changing sexual functions. The increased psychic tension is often a factor in precipitating hysterical fainting and convulsions at this time. Both increased psychic tension and changes in tissue fluids altering cortical excitability may be factors increasing the frequency of epileptic convulsions at this period of the month.

Hysterical fainting and convulsions are more closely related to psychic disturbances than are epileptic convulsions. As mentioned before, epilepsy may occur in a setting of mounting and un verbalized tension, but it is often difficult to isolate any specific precipitating factors and it must be admitted that many attacks of epilepsy are spontaneous in the sense that we do not understand why a particular attack occurs when it does. In contrast there are always precipitating factors related to hysterical fainting and convulsions. These may be elusive and they must be pursued with diligence, but if the study is adequate they will invariably be found. The patient himself can usually tell us little concerning the precipitating factors in his attacks. He will probably say "The spells just come on me" or "I just pass out and don't remember anything else until they bring me around." The symbolic movements of the patient in the attack may offer a clue to the precipitating circumstances. The relatives of the patient may detect a certain pattern in their occurrence. Frequently, we must await the gathering of psychological data over a series of interviews before the precipitating factors become clarified.—*Stevenson, New Orleans M. & S. J., March '52.*

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DON'T BE DERELICT!

The late Justice Oliver Wendell Holmes once said that a man must take part in the action of his times, lest he be judged not to have really lived.

In this critical election year of 1952 we might paraphrase that statement to say that every physician must register and vote, lest he be judged derelict in his duty as a citizen.

The vast majority of physicians are deeply conscious of their responsibilities in the care of the sick and injured. It is imperative now that they become equally conscious of their high duties as American citizens. This year of decision on vital issues requires the fullest possible expression of opinion by the largest possible number of qualified voters. Physicians, as members of an educated, thinking, professional group, must help set an example to bring that about.

So, regardless of your political viewpoint or party affiliation, *register* and then *vote*—and urge your family, friends and patients to do likewise. This is a duty which you owe to your profession, to your community and to your country. *Don't be derelict in that duty!*

SOUTHERN PEDIATRIC SEMINAR

The 1952 session of the Southern Pediatric Seminar will be held in Saluda, N. C. from July 14 through July 26. This is the thirty-first annual session of this institution which has become one of the outstanding postgraduate courses in pediatrics in the country. Following the plan which was put into effect last year, there will be an additional week (July 28 through August 2) devoted to the study of obstetric and gynecologic problems.

The Seminar was established and is maintained for the benefit of the general practitioner. Outstanding teachers and clinicians from the various Southern States come at their own expense to give lectures, clinics, clinico-pathologic conferences and demonstrations. The meetings are of an informal nature and there is ample time to present special subjects and questions for discussion. General practitioners from Virginia to Florida to Arkansas who have attended the Seminar can attest to its value.

Held at Saluda, which is in the mountains of North Carolina, many of the physicians



B. W. McNEASE, M. D.
President of the Association
1952-1953

bring their wives and families with them and make the occasion a joint period of study and vacation. Such a plan is encouraged by the leaders of the Seminar and every effort will be made to secure accommodations for those who might desire to do this.

The course given at the Seminar is fully accredited for postgraduate requirements in the Academy of General Practice.

Those who are desirous of further information should write to Dr. D. L. Smith, Registrar, 187 Oakland Avenue, Spartanburg, S. C.

A NEW HYPNOTIC

"The hypnotic drugs that are commonly employed are barbiturates, bromides, chloral hydrates, and paraldehyde. All of these have significant disadvantages. Serious toxic or untoward reactions are occasionally encountered. Some patients have an idiosyncrasy to these drugs. Habituation often poses a serious problem." Hirsh and Orsinger¹ thus open their discussion of a new hypnotic drug, methylparafynol, which is also called Dormison by its makers, the Schering Corporation. The Washington investigators studied the effects of Dormison upon 276 patients who ranged from 20 to 83 years of age. Sixty-two per cent were white and 38% Negro, and males comprised nearly two-thirds of the patients. And they tell us that "Patients having many different diseases, including hypertension and arteriosclerosis, with or without cardiovascular-renal disease, various types of arthritis, portal cirrhosis, acute hepatitis, diabetes mellitus, etc., were given the drug. Since the safety of methylparafynol had already been established in laboratory animals and preliminary clinical studies, an additional group of 81 patients with acute alcoholism, delirium tremens, and other acute psychiatric or agitated and disturbed states were given single doses of 200 to 800 mg. primarily for the purpose of further demonstrating the safety of large doses of the drug."

The authors tell us in conclusion that "A total of 276 patients have received Dormi-

son. Although most of the patients received only single doses of 100 to 800 mg., a significant number received 100 to 500 mg. for one to eight weeks. Only five patients noted any hangover and three patients complained of mild untoward effects.

"Of the 276 patients, 81 were primarily observed for safety of dosage and toxicity rather than for therapeutic effectiveness. It was found that doses up to 800 mg. can be safely administered even to highly disturbed patients without deleterious effects. The patients are therefore considered separately. A total of 195 patients were given doses of 100 mg. to 500 mg. in a study of therapeutic effectiveness. The ages ranged from 20 to 83 and no difference in effectiveness was noted according to age. Similarly, there was no difference between the results in the 122 white patients as compared to the 73 Negroes, or between the 122 males as compared with the 73 females. Since Dormison is a quick-acting hypnotic, sleep should be noted within two hours. Sleep coming after two hours cannot be accurately attributed to the action of the drug. Seventy-eight per cent of the 195 patients who received doses of 100 to 500 mg. noted onset of sleep within two hours. Effectiveness (speed of onset) generally increased as the dosage was increased. Five hours or more of sleep was noted in 86 per cent of the 120 patients queried. On the whole, longer sleep was noted with the larger doses. Satisfactoriness of sleep as judged by onset, duration, and restfulness was declared to be adequate by 77 per cent of the patients. Best results were obtained with the larger doses of 300 mg. to 500 mg.

"Poorest or unsatisfactory results were obtained in patients with severe anxiety or in acutely agitated or disturbed states. Patients complaining of pain or cough were not as satisfactorily sedated, although they complained not so much of failure of onset of sleep as they did of short duration. Larger doses frequently showed better results. Febrile states resulted in poor sedation with a dose of 250 mg. and required larger doses. This is easily understood when one realizes that during febrile states metabolism of the tissues is increased. Since Dormison is metabolized by the body tissues the use of larger doses would be anticipated.

"No effects on blood pressure, pulse, res-

1. Hirsh, Harold L., and Orsinger, William H.: Methylparafynol—A New Type Hypnotic. Preliminary Report on Its Therapeutic Efficacy and Toxicity, *Am. Pract.* 3: 23 (Jan.) 1952.

pirations, blood, urine, electrocardiogram, liver, and kidney functions were noted in any patient on whom these studies were made.

"Methylparafynol (Dormison) is a safe, non-toxic, efficient, rapid, short-acting hypnotic drug."

It is too soon for the last word to be said in regard to methylparafynol or Dormison because all new drugs usually require considerable time for their final and proper evaluation. Hirsh and Orsinger have done well to investigate this new and promising sedative and it is most devoutly to be hoped that their findings will be confirmed by other observers. The deleterious and tragic effects of most or all of the commonly used hypnotics and soporifics are only too well known to all well-informed physicians. The search for newer and safer drugs is certainly in order and there is a great need for a safe and effective sedative.

V. H. WILLIAMS

Dr. Victor Hugo Williams, vice-president of the Medical Association of the State of Alabama 1924-27, died at his residence, 112 Cloverleaf Avenue, San Antonio, Texas, September 11, 1951, of coronary occlusion.



Born March 9, 1878, at Townley, Alabama, Dr. Williams was the son of James M. and Alabama (Carmichael) Williams. He received his preliminary education in the public schools of his native state and attended George Peabody College for Teachers and the University of Nashville, receiving a Bachelor of Science degree from the latter in 1904. He was a graduate of the Birmingham Medical College, class of 1908, and later received a medical degree from the Medical Department of the University of Alabama. He interned at Hillman Hospital, Birmingham, and took postgraduate work in New York. Dr. Williams practiced in Calera, Alabama; West Point, Georgia; and Jasper, Alabama. He resided in Jasper 16 years before moving to San Antonio, where he practiced for twenty-four years.

In his early practice in Alabama, he served as County Health Officer for one term in Shelby County, and twice in Walker County.

During World War 1, he volunteered for service and as a Captain in the Medical Corps of the Army was assigned to the surgical department of a base hospital at Mars, France.

He was a member of the Texas Medical Association and the American Medical Association through Bexar County Medical Society. Dr. Williams also held membership in his early days of practice in the county and state medical societies of Alabama and Georgia. He served as president of the Fourth District Medical Association of Alabama, and as secretary-treasurer of Walker County (Ala.) Medical Society from 1925 until 1927. He was also a member of the Southern Medical Association.

In a large measure, Dr. Williams assisted in the organization and building of the Walker County Hospital at Jasper. He served as staff member of this Hospital until he moved to San Antonio in 1927. Dr. Williams also was on the Jasper school board. In San Antonio, Texas, he served for many years on the staff of Santa Rosa Hospital. He was past chaplain of the Alamo Heights Lions Club, a past commander of the Business and Professional Men's Post No. 10 of the American Legion, and a member of Travis Park Methodist Church. Dr. Williams had served as a steward in the

Methodist Church since he was 17 years of age.

On June 25, 1908, Dr. Williams was married to Miss Arpatia Wilson at Monticello, Arkansas.

He was buried in Fort Sam Houston National Cemetery in San Antonio, Texas, with full military honors.

Surviving are his wife and sons, Will James Williams, Chief Boatswain's Mate, Jacksonville, Florida; and MacWilson Williams, Corpus Christi, Texas; a brother, John H. Williams, Ensley, Alabama; and four sisters, Mrs. H. D. Harris and Mrs. Pearl Larkin, Birmingham, Alabama; and Mrs. W. H. Hubbard and Mrs. Flauda Oliver, Jasper, Alabama.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

GOOD PUBLIC RELATIONS

W. A. Dozier, Jr.

Director of Public Relations

A few years ago the members of the medical profession would have shied away from such an article as the following one which is quoted from the Montgomery Advertiser of April 9, 1952. Here is an example of a newsworthy story and one that is of interest to the public. The article was headlined by "Sumter Doctor Delivers 3 Babies on 79th Birthday."

Belmont, Ala., April 8—A 79-year-old physician here, Dr. F. L. Hester, is still practicing daily and celebrated his last birthday by delivering three babies.

Dr. Hester was born in Philadelphia, Miss., and has been a practicing physician for about 55 years.

When he first came to Belmont, about six miles west of Demopolis, there were virtually no roads. His transportation at that time was by horse and buggy, or, in rougher places, by horseback or mule.

Two important events happened when (1) he got married in 1909, and (2) bought a model T Ford in 1910.

Besides his practice, he also runs a farm and manages about 150 head of white face Herefords.

He has six children, four daughters and two sons. Twins, a boy and a girl, will be married this spring. The girl will be married in April and her twin will be married in June.

The above article is a good example of the latter half of our definition of public relations, that is "do good, be good, and tell the world about it." There is evidence that the thoughts of the profession are changing in approaching the matter of public relations. There is at the same time evidence

that a redefinition is needed on what is and what is not ethical. However, such a story as the one above surely does not offend anyone, and it doubtlessly did much good in quite a number of ways.

The purpose in quoting this article is to afford an opportunity to say that from time to time each of you has newsworthy stories that could, and should, be given to the papers. When such arise, let them be known. The public is interested; the newspapers are interested, and the profession will benefit by such judicious articles.

The Cost of Sickness—Medical societies all over the nation report that the majority of complaints reaching grievance committees involve medical costs. To reduce such complaints, encourage physicians to: (a) discuss fees in advance with patients, (b) explain "those other medical bills" submitted by specialists and medical assistants, (c) itemize bills, (d) help patients budget for long-term medical care, (e) practice good PR in medical bill-collecting, (f) publicize the idea that medical care is available to all regardless of ability to pay, and (g) promote voluntary health insurance.

State and local medical societies need to police their own ranks and take disciplinary action against members guilty of unprofessional and unethical conduct. It's that one bad apple in the barrel that causes complaint. The medical profession prides itself on its high ethical standards and its dedication to serving humanity. It cannot afford to shelter the not-so-ethical man. Also, physicians who constantly over-charge should be firmly dealt with by their medical societies. Disciplinary action, when justified, strengthens the position of the profession in the eyes of the people.—*J. Michigan M. Soc., March 1952.*

TRANSACTIONS OF THE ASSOCIATION

1952 SESSION

PART I

TRANSACTIONS OF THE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA HELD AT MONT- GOMERY APRIL 17, 18, 19, 1952

First Day, Thursday, April 17

The Medical Association of the State of Alabama convened in annual session in the Blue and Gray Room of the Whitley Hotel, Montgomery, and was called to order at 9:00 A. M. by the President, Dr. T. Brannon Hubbard.

Invocation was offered by Dr. Donald MacGuire, Pastor of the First Presbyterian Church of Montgomery.

Addresses of welcome were delivered by the Hon. W. A. Gayle, Mayor of Montgomery, and Dr. Karl B. Benkwith, President of the Montgomery County Medical Society, host to the Association.

Reports of committees were called for by President Hubbard, each, in its turn, being referred to the State Board of Censors.

REPORTS OF COMMITTEES

Prevention of Blindness and Deafness

The ophthalmic achievements at the Alabama Institute for the Deaf and Blind of the Department of Ophthalmology of the Medical College of Alabama from January 1948 to December 1951 inclusive are as follows:

1. Statistical summary

Clinic visits.....	3,343
Consultations with attending staff ..	343
Eye operations.....	141
Refractions	215

2. Seventy-three children were returned to their homes and regular public schools; 21 because of improvement of visual acuity with glasses, 9 from surgery and 43 erroneously admitted. The humanitarian benefits of these endeavors have been our first concern. They are not easily measured, but the economic gain is obvious.

3. The admission requirements were clarified, adopted and made a matter of routine. Children with visual acuity between 20/70 and 20/200 have been transferred to the partially-seeing classes

of the Talladega city schools. Instruction of the pupils in the heredity of eye diseases is given annually.

4. The cooperation that has developed between the Alabama Sight Conservation Association, the Alabama Institute for the Blind and Deaf, and the Eye Division of the State Crippled Children's Service is worthy of note.

Alston Callahan, M. D.
Chairman

Karl Benkwith, M. D.
R. J. Grayson, M. D.

Mental Hygiene

The Mental Hygiene Committee wishes to call to the attention of the Association the following developments in the fields of psychiatry and mental hygiene during the past year.

1) The personal assurance of Mr. H. F. Singleton, Manager of the Blue Cross-Blue Shield of Alabama, that, with the next revision of the Blue Cross-Blue Shield contract, the Corporation will give serious consideration to provisions for mental and emotional illnesses. Mr. Singleton tells us that he strongly supports such a revision.

2) The establishment of the Jefferson County Social and Mental Health Association, the Muscle Shoals Mental Health Society, and the Montgomery Mental Health Society. These are citizen groups in the Birmingham area, the Florence, Tuscumbia, and Sheffield areas, and the Montgomery area, for the study and promotion of mental health services.

3) The assignment of a psychiatric social worker, Miss Edna Keefe, who has been trained with funds made available under the National Mental Health Act, to act as mental health consultant, and to assist in the planning of a program for Lee County.

4) The recognition by the legislature of the mental health needs of our State by the allocation of a specific sum for the state mental health program, and for a psychiatric nurse's training program at Bryce Hospital.

The Mental Hygiene Committee wishes to congratulate Dr. William Knapp, who became director of the mental health program of the State Department of Health November 1, 1951, on the aggressive, competent and successful manner in which he has continued the program, and developed additional projects, and services; e.g., education for responsible parenthood, teacher training, pastoral counselling, and others.

The Committee wishes to express its appreciation to the Alabama Mental Health Society for

its support during the past year, and to assure the cooperation of the State Medical Association.

Jack R. Jarvis, M. D.
Chairman

Frank A. Kay, M. D.

Sidney Tarwater, M. D.

SUPPLEMENTAL REPORT

The undersigned members of the Mental Hygiene Committee wish to dissociate themselves from that Committee, and submit the following:

1) We wish to express formally our confidence in Dr. Sidney Tarwater, the Superintendent of the Alabama State Hospitals, and his staff. We recommend his administration and his clinical services to this Association, and know that the Association will grant him its confidence.

2) We deplore the publicity given the Alabama State Hospitals causing unnecessary and additional anxieties to those with relatives and friends hospitalized there.

3) We deplore the reflections that have inadvertently been cast upon our courts, the Alabama State Hospital staffs, and members of this Association. It is now possible in our State to hospitalize a mentally ill patient without harmful trauma, and with full protection for his civil rights, upon application of his family, with the recommendation of a physician, with permission of the probate judge, and acceptance by the Alabama State Hospitals. At no point in this procedure is a patient deprived of his right to defend himself by due process of law. We do not believe it possible for this group, family, physician, courts, and Alabama State Hospital staffs, to act in conspiracy against anyone.

Frank A. Kay, M. D.

Jack R. Jarvis, M. D.

Maternal and Child Health

Alabama is still improving its maternal death rate. The rate for 1950 was 1.8 per 1000 live births. This rate is truly an accomplishment for us and credit goes to Alabama physicians and hospitals, and to more cooperative work by our midwives. Our State still has handicaps and blessings probably unrecognized by our northern countrymen but even the South is making progress in the vital matter of safer motherhood.

If members of this Committee have unintentionally stepped on a few corns in their efforts to promote safer childbirth, we would remind our critics that our efforts have been most sincere, impersonal, and quite unselfish.

During the past year your Committee and the State Health Department published our five year statistical survey. During the current year we have initiated a most comprehensive individual case study and clinical evaluation of every maternal death in Alabama during 1952.

Fetal mortality is a problem of considerable importance and the full facts about it have never been known. Differences in definitions and in

registration practices have made it impossible to obtain comparable data for states and countries. Inasmuch as records have only been available for pregnancy terminations after the fifth month of gestation, the true extent of fetal wastage has never been ascertained.

During the past four years national and international groups have worked to agree upon a uniform registration system. Such an international system (WHO) has now been formulated and all states in this country have been requested by the National Office of Vital Statistics to amend their registration laws to conform to the approved international system.

The basic changes are as follows:

(1) The reporting of all pregnancy terminations regardless of the period of gestation.

(2) Any birth which results in a live born fetus (any gestation) will require a live birth certificate.

(3) Any pregnancy termination which results in other than a live birth (any gestation) will require a fetal death certificate.

(4) Our presently used stillbirth certificate will be abolished and the term stillbirth no longer used for statistical purposes.

(5) A live birth is defined as "the complete expulsion or extracting from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born."

(6) A fetal death is defined as "death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles."

(7) The method of tabulation of all live births, irrespective of the period of gestation:

a. less than 20 completed weeks of gestation, Group I.

b. 20 completed weeks but less than 28, Group II.

c. 28 weeks and over, Group III.

d. not classifiable in Groups I, II, or III, Group IV.

(The period of gestation is measured from the beginning of the last menstruation.)

(8) The method of tabulation of all fetal deaths:

a. less than 20 completed weeks of gestation, Group I.

b. 20 completed weeks but less than 28, Group II.

c. 28 weeks and over, Group III.

d. not classifiable in Groups I, II, or III, Group IV.

(The period of gestation is measured from the beginning of the last menstruation.)

Your Committee recommends that the State Health Officer proceed with plans necessary to establish in Alabama the internationally accepted system. Such plans of necessity will require revision of our present registration laws and our presently used stillbirth certificate.

T. M. Boulware, M. D.
Chairman

A. E. Thomas, M. D.

Hughes Kennedy, M. D.

Physician-Druggist Relationships

On January 24, 1952, this Committee and a like one from the Alabama Pharmaceutical Association met at the request of your Chairman, Dr. W. M. Salter, for a luncheon session at the Thomas Jefferson Hotel in Birmingham. Doctors present included Dr. R. E. Cloud, Ensley; Dr. E. L. Strandell, Brewton; Dr. J. G. Daves, Cullman; and Dr. A. J. Treherne, Atmore. Pharmacists present were: M. A. Boynton, E. W. Gibbs, V. L. Smith, C. B. Hudson, Jamie Meigs, and Phil Hudson of Opelika, Chairman of the APA Committee, who presided jointly with your Chairman at the meeting.

The discussion of mutual problems lasted nearly three hours and could be summed up as follows:

(1) Druggists don't like the doctor to dispense; the doctor doesn't like the druggist to counter-prescribe.

(2) Druggists don't like the doctor to dictate the price the druggists are to charge for prescriptions; the doctor doesn't like for the druggist to overcharge for medicine.

(3) Druggists don't like the unsupervised handout of medicine by the doctor's office nurse; the doctor doesn't like the emphasis on merchandising in some drug stores.

(4) Druggists don't like the doctor to have his patients ask for prescription items over the counter; the doctor doesn't like for the druggist to substitute or switch his patient to the druggist's pet product.

(5) Druggists don't like the doctor to insist on unreasonable service; the doctor doesn't like the druggist to discuss symptoms with patients or to do sloppy prescription filling.

Following a free and open discussion by all present, the following recommendations were adopted by these joint committees of the two Associations as resolutions of the group:

(1) Deploring the widespread misuse of barbiturates and narcotics and pledging continued vigorous and wholehearted efforts to further protect the public health and aid in every way pos-

sible in stamping out these injurious practices that are bringing such tragic results to people throughout the Nation.

(2) Continued education of both the physician and pharmacist on the refilling of prescriptions under FDA regulations.

(3) Recommended that no drug store name be used on prescription blanks and that the patient have freedom of choice of drug store in which the prescriptions should be filled.

(4) That joint meetings of physicians and pharmacists be held in every county and district to discuss mutual problems and encourage better relations. It is recommended that a doctor be invited to address the State Pharmaceutical Association at its annual meeting, and a druggist be invited to address physicians at the annual meeting of the State Medical Association.

(5) That doctors refrain from prescribing a little of every new item detailed to them and thereby help eliminate the druggists' problem of the "graveyard inventory" on their shelves which is a big financial burden.

(6) That druggists generally make a practice of using a non-refill label strip on narcotic prescriptions.

(7) That a more uniform pricing of prescriptions be established.

(8) That a code of relations between physicians and pharmacists be considered and adopted for mutual progress to further protect the public health.

(9) That the Legislative Committee of the State Medical Association and the Legislative Committee of the Alabama Pharmaceutical Association have a joint meeting and go before the next meeting of the State Legislature and present a bill to curb the dispensing of drugs except by a registered pharmacist. It is reported that the barbiturates are being dispensed by chiropractors. It is reported also that many of these patients are habitués.

(10) The growing trend of physician-owned clinic pharmacies, which is considered unfair and unethical. The doctor should practice medicine—he derives excellent remuneration from that practice and should leave the patient freedom of choice to get his prescriptions filled.

(11) Urge that doctors cooperate with the pharmacist under the Durham-Humphrey Law and *always* indicate on every prescription whether or not it may be refilled and at what intervals. This law was passed by Congress last fall and goes into effect April 26, 1952. It helps clarify the situation some but the cooperation of the doctor is a vital factor.

Several other subjects were discussed by the group and referred to the proper committee of the respective organizations for further study.

W. M. Salter, M. D.
Chairman

B. Frank Jackson, Jr., M. D.
R. E. Cloud, M. D.

Anesthesiology

Your Committee on Anesthesiology continues to feel that steady progress is being made in this specialty. Each year there is a definite increase over the preceding year in the number of physician-anesthetists who locate in Alabama. The most recent addition is a well trained and qualified anesthesiologist to direct the department at Veterans Hospital at Tuskegee.

It is very gratifying to know that in localities where anesthesiologists are available the scope of surgery ranks with that of any medical center. The Committee feels that better surgery and a definite decrease in mortality and morbidity will be the result where trained physicians who understand the normal physiology of respiration and circulation direct the anesthetic program. The surgeons as well as the medical men are increasing in number in their appreciation of this advantage to the patient.

The Committee reports that the residency program in Alabama remains satisfactory. The two institutions approved for this qualified training are the Lloyd Noland Hospital in Fairfield and the Medical College of Alabama in Birmingham. These institutions make part-time training available to any physician in the State.

Your Committee is pleased to report that the anesthesiologists in Alabama continue to play an important part in their local, state and national medical societies.

Finally, the Committee is doing everything possible to attract full time anesthesiologists to locate in our State.

Alfred Habeeb, M. D.
Chairman
Alice McNeal, M. D.
W. P. May, M. D.

Postgraduate Study

The plan of instruction which was put into effect in 1949, followed successfully through subsequent years, has been continued during 1951-52.

This plan has consisted of instruction by members of the clinical faculty of the Medical College of Alabama, serving assembly groups in various areas of the State and financed partially by individual assembly fees and funds made available through the honoring of field vouchers by the State Department of Health.

As in the past, the programs have been arranged by and through the cooperation of the Postgraduate Seminar Committee of the Medical College of Alabama.

From February 8, 1951 through March 20, 1952 nine assemblies were held as follows: Selma (6), Wetumpka (1), Winfield (2). Seventeen instructors of the faculty of the Medical College of Alabama participated. A discussion period followed each meeting.

Seminars are held in areas upon request of assembly groups. During this fiscal year the ma-

jority of assemblies were held in the southern part of the State. It is the hope of the Committee that more requests from the northern and eastern areas of the State will be received since the primary object of this type of postgraduate instruction was originally set up to make it available to all sections. The enthusiasm which has been manifested for this type of instruction in the southern area is indicated by the number of requests for such, and is evidence of its value.

The Committee recommends that this type of instruction be continued throughout 1952-53, and that the Association and the Department of Health make available the sum of \$2,500.00 to be honored as in the past through field vouchers for honoraria and travel.

Financial Statement

Receipts by The Medical College of Alabama	
Initial cash balance	\$ 500.25
Fees from assemblies	192.00
Total	\$ 692.25
Disbursements by The Medical College of Alabama	
Secretarial services	\$ 275.00
Postage	3.00
Balance on hand	414.25
Total	\$ 692.25
Agency Funds Placed at Disposal of Committee through Field Vouchers by:	
State Medical Association	\$1,000.00
Department of Health	1,500.00
Total	\$2,500.00
Field Vouchers for:	
Honoraria and Travel	\$ 710.00
Unexpended	1,790.00
Total	\$2,500.00

The Committee desires to express its appreciative thanks to the participating faculty lecturers, members of the Postgraduate Seminar Committee of the Medical College of Alabama, the various assembly groups for their services, the State Health Officer, Dr. D. G. Gill, and the State Board of Censors for making funds available for promoting the program, without whose unified co-operation this would not have been possible.

Ralph McBurney, M. D.
Chairman
Cabot Lull, M. D.
A. J. Treherne, M. D.

Cancer Control

The entire cancer program is making slow but steady progress.

EDUCATION

We realize that the chief progress made in curing cancer is in early cases. If diagnosis is established early and proper treatment instituted, we

have an excellent chance of saving at least one-third more patients than we do at this time, or probably 80,000 additional individuals can be cured each year. There has been no additional proved method of treating cancer within the past few years. The use of hormone is most useful in prostatic and breast carcinoma. These methods will prolong life and certainly make life much more comfortable, but, as far as we know, there have been no cures from hormones alone. The use of isotopes has been disappointing as a real therapeutic agent. In certain selected cases, probably in thyroid diseases, particularly toxic thyroid, and in certain blood dyscrasias, the isotopes might be of some value. It is doubtful that isotopes have any additional value over other types of radiation. Various chemicals, such as nitrogen, mustard, and urothane, have shown some encouraging results, but again their use is palliative. We see then the chief weapon that we have with our present knowledge is the use of x-ray, radium and surgery and, above all, early diagnosis.

Various journals, not only those pertaining to cancer but the majority of the medical journals have done a considerable amount of education in regard to diagnosing cancer, particularly early diagnosis, within the past few years.

Dr. Douglas Cannon, editor of our State Medical Journal, has been most cooperative in publishing numerous papers in regard to cancer. We seldom pick up the Journal that we do not find some reference to an article in regard to cancer. Dr. Cannon not only publishes articles throughout the year but one edition of the State Medical Journal is devoted to cancer and phases of cancer. In looking over the cancer edition for the past three years, one would see that the major phases of cancer have been very well covered by excellent articles.

Through the Department of Health, State of Alabama, the Cancer Bulletin has been distributed to Alabama physicians. This is an excellent summary of the work being done on various phases of cancer. This bulletin is most interesting in the way that it presents its subject. The drawings are quite impressive, the cartoons are excellent, and the summary of outstanding work on cancer is fully worth reading.

The American Cancer Society, Alabama Division, and the State Department of Health both have a number of very instructive moving pictures on various phases of cancer. Some of these films are for lay audiences, others are excellent for professional groups. The one that has attracted most attention within the past few years is Self Examination of the Breast, which is an excellent film and one that we hope every woman in the State will see.

The latest films for the profession, Gastrointestinal Study and Carcinoma of the Uterus, are fully worth while. Often when physicians are called upon to make talks in regard to cancer, it would be worth while if one of these films was shown along with the talk as we feel it makes a most impressive program. Mrs. Lillian G. Meade,

Executive Director, American Cancer Society, Alabama Division, 907 Ramsay-McCormack Bldg., Birmingham, will be glad to furnish a list of the films available and will also be glad to let any physician in the State have these films for his use in teaching or showing, before lay or professional audiences. The Cancer Control Division, State Department of Health, also has films that can be obtained by writing Dr. W. H. Y. Smith, State Department of Health.

RESEARCH

We are fully aware that cancer will have to be conquered by intensive research. Alabama is most fortunate in having such an extensive cancer research program within its limits. This Committee has little to do with the research within the State but it is cooperating closely with the American Cancer Society, and through the American Cancer Society there is a tremendous amount of research being carried on in the various schools within the State, as well as in a number of hospitals. Probably the largest single research project in Alabama is being carried on by the Southern Research Institute in Birmingham. Dr. Howard E. Skipper has been most cooperative in speaking throughout the State in regard to cancer and particularly his recent research work on cancer.

Mrs. Lillian G. Meade in submitting her report will probably give a more detailed account of these research studies, as a majority of them are being conducted under the auspices of the American Cancer Society and most of them under grants from the Alabama Division of the American Cancer Society. The Society has always been most cooperative in dealing with any phase of cancer. The chief purposes of the Society are education, research and, to a less extent, helping take care of special cancer problems, such as dressings, transportation for indigent patients, palliative drugs to relieve pain and, in special cases, probably other medication as found completely necessary. The American Cancer Society, as we know, does not have the means to treat patients and for that reason is often blamed for not helping more in the treatment of patients when that is not actually its purpose.

CLINICS

We have five state-aid clinics operating in Alabama. These clinics take care of indigent cancer patients approved by Welfare Departments. We realize that these clinics can take care of only a very small number of cases, but with limited State funds we are trying to do the best we can for as many early cancers as possible. We are not able to take care of leukemias, lymphomas, Hodgkin's disease, lymphosarcomas, tumors of the brain, skin tumors, or any of the far advanced, hopeless cancers. The tumor clinics try to take care of only those patients who have a reasonable chance of recovery.

For those who are not familiar with the clinics, we will briefly outline how a patient can be treated through one of them. The necessary application forms can be obtained from the County

Health Department. The application is to be filled out by the patient's physician. After the physician has filled out his part of the form, it is forwarded to the County Welfare Department. The Welfare Department investigates the patient and if it feels the patient is worth while, the information is forwarded to Dr. Smith's office in Montgomery. It is through Dr. Smith's office that the application is approved and authorization for treatment sent to the local tumor clinic. The patient and referring physician get a notice as to when and where the patient is to report.

RECOMMENDATIONS

Education, both for the physicians and the public, should be continued. The Cancer Bulletin and the State Medical Journal should continue to publish as many articles as possible pertaining to cancer and cancer control.

Until there is a larger appropriation to take care of charity cancer patients in the State, little expansion can be expected. In fact, there will probably have to be some curtailing of the number of patients who can be treated through the clinics as the expense of transportation and hospitalization has risen considerably since the cancer program was first instituted and the original fees are not in a fair proportion to the cost.

Some thought of a part-pay clinic, such as is found in other cities, should be considered so that the patient can pay at least part of his way and not be entirely charity.

Care of terminal cancer patients continues to be a problem but we feel this should be taken care of on a local level and not on a state or national basis.

We again wish to emphasize early diagnosis. The first physician who sees the patient can probably do more to save lives than any other agency we have at this time.

A joint meeting of members of the Board of Health, State-Aid Cancer Clinics, Cancer Committees, State Medical Association and representatives from the American Cancer Society, Alabama Division, should be held to determine if a better correlated program can be worked out. At least a number of questions can be answered and a general discussion engaged in. A similar meeting was held several years ago at Birmingham and proved to be advantageous for all who attended.

RECOGNITION

The Committee wishes to give recognition to the physicians in the five state-aid clinics for their unselfish work in taking care of indigent cancer patients.

We further wish to express our appreciation to Dr. W. H. Y. Smith and his staff for the excellent way in which they have taken care of the cancer program with limited facilities and means.

Without the excellent cooperation of the American Cancer Society, Alabama Division, under the leadership of Mrs. Lillian G. Meade, the can-

cer program within our State would certainly be on a much lower level.

John Day Peake, M. D.
Chairman

J. P. Chapman, M. D.
Roger D. Baker, M. D.
F. H. Craddock, Jr., M. D.
W. N. Jones, M. D.

REPORT, ALABAMA DIVISION
AMERICAN CANCER SOCIETY
MRS. LILLIAN G. MEADE
STATE COMMANDER

As Executive Director of the American Cancer Society, Alabama Division, I am pleased to present this report to the Cancer Committee of the State Medical Association and to the Association as a whole.

April, as you know, is Cancer Control Month, so designated by a special Act of Congress, but the work of the American Cancer Society is on a twelve-month basis. Its three point program of research, service and education is a needed one.

Through our volunteer workers, a continuing program of education by radio, newspapers, magazines, outdoor advertising posters, street car and bus cards, distribution of literature, school programs, film showings, and innumerable talks to civic clubs has been engaged in and there has resulted a greater interest in cancer control by the lay public.

Education is not something that can be measured by a yardstick, but I think that you, as doctors, can realize more than any other group the growing awareness of the lay public to the problem of cancer. Reports you give me indicate that persons are seeking early diagnosis and treatment.

Thousands of Alabama women have viewed the film, Breast Self-Examination, during the current year. It is our plan to continue showing this film until every woman in Alabama has had an opportunity to take advantage of seeing this splendid life-saving film.

On January 8th all County Commanders were brought to Birmingham for a one day training course, called Investment Day. In turn, educational meetings were then held in practically every county. Certainly the population of Alabama is becoming more cancer conscious, due to meetings of this sort. "A few hours invested in facts about cancer can save lives" is our slogan.

The American Cancer Society is furnishing funds for an extensive research program in Alabama. A total of \$403,588.00 has been spent on cancer research in this state alone. The beneficiaries are: Alabama Polytechnic Institute, Alabama Association of Pathologists, for Tumor Registry, Highland Baptist Hospital (Birmingham), Medical College of Alabama, and Southern Research Institute.

As you probably know, 25c out of every dollar raised by the American Cancer Society is allocated to research, on a national basis, but the

Alabama Division has added 24c more to its allocation for research, and is very proud of its ability to do so.

While the manner of actual treatment of indigent cancer patients is designated by a state law in Alabama, as passed by the Legislature in 1943, transportation of indigent cancer patients, furnishing of bandages and dressings, and drugs for palliative treatment, when requested by the local physician, is a service program adopted by the American Cancer Society.

May I call your attention to the fact that while we are paying bills for medicines for palliative treatment, we are very careful to have the bills signed by the doctor giving the prescriptions before payment is made.

As you know, during the month of April the American Cancer Society asks the general public, and that includes the doctors of Alabama, to support its drive for funds. I wish that this year we might set a record of at least a \$1.00 contribution from each doctor in Alabama. It would make a splendid report, and would add considerably to the American Cancer Society's financial status. The demands for money from the American Cancer Society are increasing daily, and we do hope that a little extra money will be given this year to this organization.

The medical and scientific director of the American Cancer Society, Dr. Charles S. Cameron, was a guest at a state campaign meeting held in Birmingham February 5th. The President of the State Medical Association, Dr. T. Brannon Hubbard, as well as other distinguished members of the medical profession, were among our guests at this meeting. Dr. Cameron's inspiring address to the volunteer campaign workers was the highlight of this training session.

During the past year the State Commander has traveled some twenty-two thousand miles, has attended one hundred and thirty-five meetings to represent the American Cancer Society, and made one hundred and one talks to men's and women's groups over the State. In addition, literally hundreds of talks have been given by doctors and volunteers of the American Cancer Society. Civic clubs have been especially interested in the problem of cancer control this year.

If I might make one suggestion it would be that each of our County Medical Societies have a program on cancer during the next year. The American Cancer Society will be very happy to furnish you with any films that would be of assistance.

Under the field of professional education we have in our office, and available for the use of the doctors of Alabama, three medical films: The Problem of Early Diagnosis, Cancer of the Breast, and Gastrointestinal Cancer.

While we have advised medical groups of their availability, there have been very few requests for the use of these films. They are available, without charge, from our office, 907 Ramsay-McCormack Bldg., Birmingham 8, at any time for use at county medical meetings.

The American Cancer Society, Alabama Division, is very proud of the fact that it has worked under the supervision of the Cancer Committee of the Medical Association, and is cognizant of its responsibility in this field. It is also very proud of its cooperation with the State Health Department.

As we have stated before, we feel very strongly that a much better program in cancer control would result if there were a full-time director of cancer control in the State Health Department. In those states where such a director is employed, a better all-round program can be developed.

Tuberculosis

Tuberculosis is a challenging problem facing our great State of Alabama today and is still, needlessly, taking the lives of its beloved citizens. The present slowly downward trend in mortality rates in the State reminds me of the old song, "Old soldiers never die, they just fade away." Tuberculosis is merely being retired at a time when it should be routed. Yet, some progress has been made in the fight to eradicate the disease.

TUBERCULOSIS IS ALABAMA'S "DEEP-WATER" PROBLEM

To most people a diagnosis of tuberculosis comes as a shock and threatens the solidarity of a family, causes lost jobs, lost incomes and untold hardships.

Death rates from tuberculosis in the Registration Area of the United States declined from 201.9 per hundred thousand in 1900 to 26.3 in 1949, which is the last year for which figures are available. The progress in combating tuberculosis is reflected in the 1951 rate of 25.5 per 100,000 (see chart No. 1) which is approximately one third of the death rate in 1930, or twenty-one years ago. The 1951 death rate of 25.5 per hundred thousand represents a decrease from the previous year which was 26.7.

This fifty year decrease, remarkable though it is, does not indicate to the tuberculosis control specialist that the Great White Plague is being satisfactorily wiped out because of the following facts:

I. 10,250 Alabamians have pulmonary tuberculosis.

Although, rapid progress is being made in saving lives from tuberculosis, slower progress is being made in saving people from the disease itself. The darker side of the picture is that there were 6,157 known cases in Alabama in 1942 as compared with 10,252 in 1951. This increase in case load is attributed to expanded diagnostic facilities, multiphasic screening surveys and to better education regarding the disease.

II. 792 Alabamians succumbed, needlessly, to the disease in 1951 (see chart No. 1).

III. Still occupies 6th place in the mortality scale of the ten major causes of death (see chart No. 1).

IV. The disease is still the major cause of death in the age group 15-34 years, and kills more than all the other communicable diseases combined.

These facts should not contribute to a feeling of complacency in the control of tuberculosis.

The more than 10,000 Alabamians who have tuberculosis range from those who are mildly ill, requiring little treatment, to those who are extremely ill and who need a great amount of care. Only a few are amply able financially to care for themselves, whereas the vast majority have nothing except what the community can offer, which is almost always much too little.

Chart 1
Ten Leading Causes of Death—Alabama

	Provi- sional 1951		Provi- sional 1950		Average 1945-1949	
	No.	Rate	No.	Rate	No.	Rate
1. Diseases of heart	8,164	263.1	7,919	258.0	6,137	204.6
2. Vascular lesions of central nervous system	3,303	106.4	3,069	100.0	2,609	87.0
3. Malignant neoplasms	2,767	89.2	2,860	93.2	2,560	85.3
4. Accidental deaths	1,962	63.2	1,911	62.3	1,848	61.6
5. Pneumonia	1,085	35.0	1,049	34.2	1,145	38.2
6. Tuberculosis	792	25.5	819	26.7	1,063	35.4
7. Immaturity	781	9.4	718	8.8	946	11.7
8. Nephritis	726	23.4	738	24.0	1,754	58.4
9. Homicide	374	12.0	438	14.3	426	14.2
10. Diseases of arteries	359	11.6	326	10.6	287	9.6

Heart disease, vascular lesions, nephritis and immaturity not comparable to five-year average due to change in coding procedure.

The central register of tuberculosis cases at the State Health Department reveals that at least one third of the more than 10,000 cases have constantly, or at times, positive sputums. Only about 700 of these 10,000 cases are in a sanatorium where tuberculosis specialists believe they have the best chance of recovery and the least chance of passing the disease on to others. According to the U. S. standard we need 2½ beds per annual death. In this event we need 792 deaths x 2.5 equals 1980 beds to meet the minimum standards.

PROGRESS MADE IN COMBATING
TUBERCULOSIS IN ALABAMA

The decline in deaths from tuberculosis has been accelerated in recent years because of the development of new drugs, important advances in surgery and expanded case-finding programs through which many of the cases are discovered in the early stages.

New Drugs: The first drug to prove of definite therapeutic value in the treatment of tuberculosis is streptomycin which has become the criterion for evaluating other drugs in the treatment of the disease. Streptomycin has greatly enhanced the effectiveness of most other methods of therapy. Purification, adjustment of dosage, and supplementation with PAS, have largely eliminated the early complications, greatly prolonged its period of effectiveness, and enhanced its usefulness to a greater degree.

A new drug known as isonicotinic acid hydrazide appears on the horizon and promises to be as effective as streptomycin and PAS. The new

drug is probably tuberculo-static in action, can be given by mouth, and has very few side reactions. The immediate results of treatment in human beings are good. Many patients lose their fever and cough, gain weight and feel better in general. The question of drug resistance, optimum dosage and late effects are still to be answered and will require further study.

There is no good reason for anticipating that the new drug will reduce or eliminate the need for tuberculosis hospital beds. They are not preventive. If the drug fulfills its early promise, there is additional reason for increasing case finding, isolation and treatment in hospitals and rehabilitation.

New Sanatorium: Sunday, December 16, 1951, the new District I Sanatorium at Decatur was dedicated and will furnish beds and treatment for approximately 175 patients. It is modern and well-equipped in every detail and will exert a tremendous effect in the fight to eradicate tuberculosis from our state.

Surgery: Recent advances in the field of thoracic surgery have made it possible to excise and remove tuberculous lesions in the lungs completely by segmental resection, lobectomy and even pneumonectomy. This new approach undoubtedly will be greatly expanded in the years to come and supplant some of the older as well as the newer methods of therapy.

DIVISION OF TUBERCULOSIS CONTROL
ALABAMA STATE BOARD OF HEALTH

Tuberculosis control activities of the state diagnostic clinics were curtailed slightly during 1951 because of a decrease in funds appropriated for that work. A breakdown of the figures (see chart No. 2) reveals that 200,216 were x-rayed in the survey, 29,946 in the diagnostic clinics, and a total of 2,661 new cases of tuberculosis found.

Chart No. 2

Ratio of New Cases of Tuberculosis to Number of Individuals X-Rayed by Year 1947-1951.

Year	No. X-Rayed	No. New Tuberculosis Cases
1947	72,736	3,051
1948	199,244	2,773
1949	212,751	2,624
1950	396,100	3,092
1951	230,162	2,661

Consultation service in the interpretation of x-ray films sent in by private physicians revealed a slight decrease (see chart No. 3).

Chart No. 3

Year	Consultations
1948	333
1949	594
1950	492
1951	408

Activities of this division are being curtailed because of gradually decreasing Federal funds allocated for this purpose.

Chart No. 4

Federal Funds Allocated for State T. B. Control

1948	152,000.00
1949	150,362.00
1950	148,404.00
1951	144,406.00

STATE SUBSIDY PLAN

The state subsidy situation improved considerably and just in time to prevent a severe crippling effect on the various Sanatoria over the State.

In the summer of 1951 the Legislature adopted an amendment to the old law to provide "one-half of the cost of hospitalization up to \$2.00 per day." The per diem average was \$1.50 for 1951. and the rate increased to \$2.00 in October of 1951. (see Chart No. 5)

Chart No. 5

State Subsidy for Tuberculosis Patients

Year	Per Diem	Patient Days	Hospital Beds	State Appropriation
1947	\$1.00	200,632	668	185,000
1948	\$1.50	217,621	674	300,000
1949	\$1.30	211,430	674	300,000
1950	\$1.30	226,548	708	300,000
1951	\$1.50	236,421	708	300,000
1952	\$2.00	Increase?	Increase?	450,000

The appropriation for subsidy at the \$2.00 rate was not sufficient according to State Health Department officials because of an unexpected increase in the number of beds and an increase in cost of maintaining said beds. One Sanatorium had approximately 55 more patients than its licensed bed capacity. The subsidy was cut slightly during January, February and March of 1952 but restored to \$2.00 per day April 1952 on the basis of the licensed bed capacities of the various Sanatoria. See Chart No. 5.

The restriction of Sanatoria to the licensed bed capacity will enable the Health Department to maintain the \$2.00 per diem rate for the remainder of the year.

RECOMMENDATIONS

(1) That we undertake a long term program to build, equip and operate a sufficient number of beds to take care of the tuberculous patients of the State adequately. According to the yardstick, 792 deaths x 2.5 rate equals 1,980 beds.

(2) That the State of Alabama take over the complete maintenance of their tuberculous ill people.

The financing of the various Sanatoria was eased somewhat by the increase in state funds and the increase in maximum permissible to \$2.00 per day. It is becoming even more apparent that the ultimate answer to the hospitalization of tuberculous patients lies in complete maintenance by the State. The uneven pattern whereby patients in certain counties receive free treatment

while those in others are unable to get any help and must remain untreated can only be solved by action on the part of the State. Our sister states in the South, e.g., Mississippi, Tennessee, Georgia and Florida, do it. So can Alabama.

P. W. Auston, M. D.
Chairman

Medical Service and Public Relations

It might well be said that the Committee on Medical Service and Public Relations has concentrated its efforts during the past year in three general fields: education, placement of physicians, and legislation.

In the first of these, education, the activities and investigations of the Committee have covered a wide range. The Dean of the Medical College has met with the Committee, and a subcommittee has had other meetings with representatives of the College. The first problem considered was the training of medical aides. Although no final action has been possible on this matter, much necessary background information has been gathered; and the problem is still under consideration. It is believed that progress has been made on this matter and that eventually some solution may be reached.

Consideration was also given to the matter of sending internes and residents out into the State. Here again no final action or plan has been evolved, but progress has been made. The Council on Medical Education of the American Medical Association would approve one month intern training in the field. One can readily see the attendant problems that have and would inevitably arise when trying to solve this proposal. The matter of a resident's going out into the State is a different situation. The Medical College has quite a number of such requests but very often cannot fill them. According to the Dean, one great difficulty here lies in the fact that the College cannot house any more residents at present, and this in turn means that there are not enough to allow some to go out to other towns and hospitals.

On the matter of continuing training for physicians, the Public Relations Director has continued giving assistance to the Alabama Academy of General Practice. The Medical College offers this group two two-day postgraduate training sessions each year. These courses have been well received, and it is felt that any assistance we can give on this matter will be rewarding to the profession.

Let us turn now to the second general field of our endeavor, that of physician placement. It is safe to say that one of the most urgent medical problems in the minds of many people is the fact that their town or locality does not have a physician. We all know that many areas within the past few years have been able to attract and keep young doctors, but there are many which have not. This feeling of need or actual need of the people in these areas was brought sharply

into focus by a meeting with representatives from the Alabama Farm Bureau Federation and the Extension Service of the Alabama Polytechnic Institute. Mr. Aubrey Gates, Field Director of the Council on Rural Health of the American Medical Association, met with us; and during the conference it was possible for each group to bring its problems out into the open and discuss them. This Committee has recommended to the State Board of Censors and again recommends that some system be worked out whereby these interested groups, such as the Farm Bureau and the County Agents, will help us in assessing an area as to its needs and abilities to support local physicians. With such information before the Medical Association, it would then be possible to help the needy areas and to be of greater assistance to physicians looking for an Alabama location.

Our work in the field of legislation was perhaps disappointing in one respect. We were unsuccessful in our efforts to make a proposed change in the medical licensure law. However, we were successful in two aspects. Our proposal forestalled a move which would have changed the present law in a manner that could prove very detrimental to the people of Alabama; and secondly, we were able to see in action the feelings of some people toward the profession. We now know more than ever that our public relations fences must be mended and that it must be done at home by the individual physician.

During the above legislative battle the public relations office served its prearranged purpose as the tie between you at home and those who were on the legislative scene. In most instances the results were gratifying, and each person helped to his best ability. There were, however, isolated examples wherein the members of a County Medical Society did not rise to the occasion. We believe that corrections can be made in these isolated instances, and we shall certainly do all possible to rectify the situation.

After realizing again the immensity of the job facing the profession if it is to convince the legislature to make the proposed changes in the licensure law, it was decided, with the approval of the State Board of Censors, to begin our work now. Therefore we have outlined an overall plan and have begun it. First, a public relations conference was called to which representatives of each County Medical Society and County Auxiliary were invited. Fifty-eight people representing twenty-nine counties were present. Those present were briefed on the background and the proposal and then offered an all-inclusive plan of action. It was the feeling of these representatives that we should go forward with our work. We are now ready to approach the other County Societies for their approval of our plans.

After a majority of our Societies and members have approved our basic proposal we then plan to begin our big job of convincing the legislators and the public of our sincerity and the correctness of our proposal. We have assembled the following outline for our guidance. Here, let one or two statements be made concerning our plans. They must and will remain flexible. We are not,

for example, trying to dictate to each Society the action it should take. Under II of the outline we have tried to prepare an all-inclusive plan from which each individual Society may select those parts that are applicable to the local situation. If the whole program be carried out it would insure that each member knew his state representatives personally; that the representatives knew the Medical Association, its functions, and its ideals; and that we would have his support in our efforts.

The following is our basic outline:

I. After the conference the Public Relations Director and/or representatives from the Officers, State Board of Censors, or Committee on Medical Service and Public Relations should go to the various County Societies, especially those not present at the conference, and follow fairly closely the program used at the conference.

II. Program for the County Societies.

A. A three-phase approach to state representatives and senators.

1. A social gathering with representatives as guests.
 - a. Have Auxiliary plan and execute this.
 - b. Have as near 100% present as possible.
 - c. Don't talk business other than his.
 - d. Be sure everyone present meets representatives.
2. A business meeting with representatives as guests. Purpose to give him knowledge on problems and how met.
 - a. Suggest a meeting of County Board of Censors.
 - b. Follow usual business proceedings so representatives get full picture.
 - c. Be sure there are a couple of important questions to be discussed.
 - d. If possible, questions should relate to representatives' interests.
 - e. Might be helpful in planning to insure discussion ahead of meeting time.
3. Approach representatives on specific proposal.
 - a. Explain bill and purpose behind it.
 - b. This should first be done by two or three who know representative well and have influence with him.
 - c. His reaction will determine future work. It may be necessary to get more physicians to call on representative, and it may also be necessary to get lay help.
 - d. Get representatives committed to support bill.

III. Program for Auxiliary.

A. This program must be handled with the advice and close cooperation of the County Society. Where there is no active Auxiliary, the Society should institute such a program.

1. Plan and handle the social meeting with the representatives.

2. Get two or three physicians and two or three Auxiliary members who are good speakers and set up speaker's bureau on this specific problem.

- The subject matter should be the Association, its work and functions, and the meaning of the title M. D.
- Approach various business, professional, and social groups and get speaking engagement.
- Get speaker to appointment.
- Purpose here is purely educational.
- Hit as many segments of public as possible.

IV. Program for Public Relations Director (in addition to I above).

A. Prepare materials for County Societies.

- A program kit giving outline of plans, etc.
- Short brochure on proposed bill.
- Speakers outline for bureau speakers.
- Pamphlets.

a. One for general public.

(1) Educational on general field such as the Medical Association and what M. D. stands for.

b. One for representatives.

(1) This more specific citing important facts in the licensure situation.

B. Serve as clearing house for plan.

- Set up communication channels so will know picture at all times.
- Be in position to get information to and from Committee on Medical Service and Public Relations and State Board of Censors.

C. Whenever possible visit County Societies and Auxiliaries. Accept some speaking engagements—these to be dictated by situation in office and in the locality.

V. Second Public Relations Meeting.

A. Purpose here is to make a recapitulation, fill in holes, estimate progress, plan final phase of program.

B. Where?

- Montgomery.

C. When?

- Late fall of 1952 or early winter 1953.

VI. Reintroduction of bill into State Senate and House of Representatives.

There is little need of listing the other activities of the public relations office as they are all known to you. Mention should be made, however, of the fact that during the past year this office has been called on more than previously to help other committees of the Association; thereby it has served an important function.

Besides representing the Association before allied and lay groups and representing the state organization with the County Societies, the Public Relations Director has attended an American Medical Association meeting, a national rural

health conference, and a conference of the American Medical Education Foundation.

When the public relations committee began to function, it was necessary for its fiscal year to begin on April one of each year. Since we have some experience behind us now and can judge to a degree what we are likely to have as our appropriation, our proposed budget for the coming year has been drawn for a nine-month period instead of the usual twelve. By having our fiscal year coincide with the calendar year, we will be on the same basis as the Medical Association and thereby facilitate the overall problem facing the Treasurer. The following is a statement of the expenditures for our fiscal year 1951, that is April 1, 1951 through March 31, 1952, a proposed budget for the remaining nine months of the 1952 calendar year, and a statement of the surplus account. The proposed budget is based on an assumed appropriation of \$16,500.00.

1951 Expenditures and 1952 Proposed Budget

	Expenditures 1951		Proposed Budget 4-1-52 to 12-31-52 Assuming \$12,375 Appropriation (9 12 of \$16,500.00)	
Salaries				
Director	\$6,600.00		\$ 4,950.00	
Clerical Asst.	2,400.00	\$ 9,000.00	2,000.00	\$ 6,950.00
Travel Expense				
Committee			150.00	
Director	1,827.84	1,827.84	1,665.00	1,815.00
Printing				
Health Column	243.66		189.00	
Lit. & Bulletins		243.66	225.00	414.00
Office Equipment		653.05		100.00
Office Rent		960.00		720.00
Stat. and Supplies		1,089.49		900.00
Telephone and Telegraph		273.39		108.00
Radio				25.00
Postage		974.76		765.00
Art				25.00
Library		58.02		75.00
Miscellaneous		275.03		478.00
Total		\$15,355.24		\$12,375.00
Legal Fees		3,000.00		
		\$18,355.24		
Unencumbered Balance				
From Surplus			\$ 9,901.67	
From 1952 Appropriation			4,225.00	14,126.67
				\$26,501.67

Surplus Account As Of March 31, 1952

	Yearly Appropriation and Expenditures	Yearly Surplus
Original Grant	\$ 5,000.00	
Expenditures 4-1-47 to 12-31-47	\$ 365.88	
Expenditures 12-31-47 to 6-30-48	286.69	
Expenditures 7-1-48 to 3-31-49	1,327.76	
Expenditures 4-1-49 to 3-31-50	1,296.99	
Expenditures 4-1-50 to 3-31-51	261.00	
Expenditures 4-1-51 to 3-31-52	653.05	4,191.37 \$ 808.63
1948 Appropriation	14,484.50	
Expenditures less office equipment 7-1-48 to 3-31-49	8,541.22	5,943.28
1949 Appropriation	15,555.00	
Expenditures less office equipment 4-1-49 to 3-31-50	14,782.24	772.76
1950 Appropriation	16,597.50	
Expenditures less office equipment 4-1-50 to 3-31-51	13,383.31	3,214.19
1951 Appropriation	16,965.00	
Expenditures less office equipment and Legal Fees 4-1-51 to 3-31-52	14,702.19	
Legal Fees	3,000.00	-737.19
		\$10,001.67

The members of the Committee on Medical Service and Public Relations appreciate the co-operation and assistance that they have been given by the Board of Censors, the Association officers, the County Societies, the individual members, and the Auxiliary; and we wish to thank each of you. At the same time, we ask for even greater assistance in the year to come; for we are convinced that our greatest job lies before us during the remainder of 1952 and 1953.

Edgar G. Givhan, Jr.	Joe H. Little
Chairman	Francis M. Thigpen
B. W. McNease	J. O. Finney
J. G. Daves	Ex officio
John Day Peake	T. B. Hubbard
J. P. Chapman	Douglas L. Cannon
J. Paul Jones	D. G. Gill
E. L. Gibson	

Industrial Medicine

The Committee has carried on the usual liaison with the National Committee on Industrial Health and supplied it with information requested.

It is believed the Birmingham Industrial Health Council, which was sponsored by the local Chamber of Commerce and supported to a great extent by the Jefferson County Health Department, is the best medium available to demonstrate to both employer and employee the value of industrial medicine. Its mass surveys in various plants in this area have turned up many unsuspected pathologic conditions. This plan should be of interest to other cities in Alabama and a summary of the activity is to be written up and published in the Alabama State Journal sometime in the near future.

So many of our towns are becoming industrialized that it is very difficult for a doctor to practice medicine without coming in contact with so-called industrial medicine, even though he is paid by the private patient and not by the industry. There is no doubt that industrial medicine is here to stay, and it is believed it would be helpful if our local Medical School would have a few undergraduate lectures on the subject, or if nothing else rearrange a few lectures on public health and harmful physical agents so that it would give our graduates at least the knowledge that industrial medicine does exist.

D. O. Wright, M. D.
Chairman

R. A. Hamrick, M. D.
E. A. Isbell, M. D.

Nurse Recruitment

The Alabama Student Nurse Enrollment and Counseling Service in Birmingham, under the direction of Miss Frances Raley, sponsors joint committees on nurse recruitment. The local committee for the Mobile district meets monthly at Barton Academy. Members of the committee are Catholic and public school principals, heads of local hospitals and schools of nursing, public

health officers, school sponsors of Future Nurses' Clubs, and Future Nurses' Club members. The joint committee enables leaders in education to work closely with the schools of nursing to make known, and publicize, the advantages and opportunities in the field of nursing.

For the past year the Enrollment and Counseling Service has sent posters and packets of literature to libraries and mobile units in Alabama. It has sent letters and news mats to all newspapers in the State. It has contacted school principals to obtain their cooperation with schools of nursing in their recruitment programs. It has contacted radio stations for public service announcements regarding the opportunities in nursing.

Future Nurses' Clubs have been organized over the State.

Lastly, the Enrollment and Counseling Service is trying to interest clubs and civic organizations in setting up scholarships and scholarship loan funds for young women eager to enter schools of nursing but who are unable to do so because of financial difficulties. The fact that there is only one registered nurse to serve the health needs of every 426 people in the combined counties of Mobile, Baldwin, Choctaw, Clarke, Monroe, and Washington gives us something to think about.

A. D. Henderson, M. D.
Chairman

Voluntary Health Insurance

In December 1950 the Committee on Voluntary Health Insurance of the Association was appointed by President J. M. Weldon.

At the last annual session of the Association the Committee reported that time had not permitted a thorough study of the problem, viz., voluntary health insurance for the low income group; therefore, it was recommended that further time be allotted for study and that the Committee be continued for another year.

Since last April the Committee has proceeded with further investigation and analysis of its assigned duties. In an effort to obtain a cross-section opinion of the doctors of the State, questionnaires were prepared according to categories of medical practice and given extensive distribution. The Committee was disappointed that only 325 questionnaires out of 2,000 were returned, and out of the 325 many answers were omitted on each questionnaire. This represented about 1/6 of the membership of the Association, a percentage too small for the Committee to regard as sufficiently representative for guidance in reaching a safe conclusion. The Committee looked with considerable seriousness upon the apparent lack of interest on the part of the doctors and sensed the feeling that our doctors may not be alerted to the significance of the nation-wide problem of the overall consideration of providing medical care for those of low income. In addition, there were wide variations in suggested fee schedules and in what might be considered

a low income. These factors would have been definite deterrents in arriving at sound and workable actuarial studies.

With the above mentioned data before the Committee it became quite evident that efforts to be decisive, on particulars of health insurance for the low income group, had collapsed and in consequence thereof, the following report was unanimously adopted by the Committee at a meeting held in Montgomery on March 30, 1952:

- 1) The Committee does not recommend a service contract.
- 2) The Committee suggests to the State Association that each County Medical Society endeavor to fix low income group in its respective county and likewise to set up a maximum fee schedule to be charged this group and that this fee schedule is also to be determined on a county basis.
- 3) The Committee suggests that in order to make this plan more feasible that a grievance committee be established on a county level to handle problems that might arise in the particular counties.
- 4) The Committee suggests that the doctors lend whatever support possible to the Blue Shield Corporation.

The Committee is glad to have had the honor and privilege of serving the Association on a matter of much importance to the profession and the public. It is felt that this report will occasion varying reactions, but to have gone further in recommendations may have been presumptuous as the Committee did not feel that the doctors of the State had indicated a desire to disturb the status quo of health insurance as it is now operated. Hence, the decision to allow the County Medical Societies to adjust the matter as seen best for particular localities rather than on a state level.

The Committee wishes to thank Mr. William A. Dozier, Jr., Public Relations Director of the Association for his valuable assistance in preparing and mailing the questionnaires.

The Committee acknowledges with much appreciation the rather costly and enormous contribution made by the Hospital Service Corporation of Alabama in analyzing the data on the questionnaires received.

For the Committee,
J. R. Garber, M. D.
Chairman

Committee of Publication

Douglas L. Cannon, Chairman

Two items of a financial nature make this report of the Committee of more than passing importance: (1) as related in the report of the Secretary-Treasurer, cost of publishing the Journal in 1951 exceeded revenues applicable thereto by \$698.65; (2) its publication beginning July 1, 1952 will show an increase in cost of about \$150 per month. It had been supposed that some part

of the annual dues of members would represent subscription to the Journal but the relatively small portion of such dues available for the over-all operation of Association business leaves no part to be applied to the Journal; and therefore the deficit of \$698.65 means that revenues from advertising failed to meet the bill by this amount.

Sight should not be lost of the fact that, regardless of whatever new endeavors the Association may wish to engage in, the amount of money available, exclusive of the allotment for public relations, has shown no increase over the years. There is another matter of weighty consideration also: Of the Association's 1800 members, nearly one-third are exempt from payment of dues, leaving 1200 to carry the organization in all its operations.

As to the increased cost of publishing the Journal beginning in July, our printers, who have been doing the work of the Association since 1875 and who prize the business highly, have advised that for some months they have realized that advancing cost of production would make it necessary that they charge more for the work. Faced by such a contingency, the Chairman of the Committee of Publication has had frequent conferences with the printers in order to arrive at the best possible proposition for the Association, and he is convinced that the new contract that is being offered is reasonable. Aside from what is actually paid for, the printers render many services in connection with producing and distributing the Journal that are gratuitous, and our organization is under great obligation to them because of these courtesies.

A solution to these financial problems is not being proposed now. Only one suggestion is being made at this time: that we continue to operate in 1952 under the present plan of dues distribution, and that the Secretary-Treasurer be authorized to dispose of such part of the bonds of the Association as may be indicated to care for any deficit that may occur. This may not be necessary so long as the Secretary-Treasurer is permitted to kite on the funds assigned public relations, which funds are always more than enough to meet a current year's operation of that program. Also, there will not be a recurrence of certain extraordinary items of expense; and there should be increased revenues from Journal advertising. Certainly this year's further experience in financing the Association on dues now available, and as presently distributed between general operations and public relations, should serve as a guide to our future course in these connections.

REPORTS OF OFFICERS

Report of the Secretary-Treasurer

Douglas L. Cannon

MEMBERSHIP OF THE ASSOCIATION

The membership of the Association, as enrolled April 1, 1952, is 1801. Of the state's 1975 physicians, 91 per cent are identified with the Association.

DEATHS

Fifty-four (54) members of the profession have died since the report of 1951 was rendered. They were:

Andrew, James	Cordova
Bains, R. C.	Bessemer
Bates, I. C.	Dothan
Beard, R. S.	Huntsville
Berry, W. T.	Birmingham
Booth, W. M.	Hartselle
Boswell, F. A.	Elmore
Brice, J. A.	Birmingham
Burkett, W. T.	Dothan
Caine, V. H.	Orrville
Cawthon, E. W.	Plateau
Coleman, L. S.	Theodore
Crook, W. R.	Elba
Dennis, T. E.	Monroeville
Elliott, T. C.	Butler
Embry, J. C.	Vincent
Fleming, J. C.	Hartford
Ford, C. H.	Birmingham
Gamble, H. S.	Headland
Godbold, J. C.	Whatley
Hamilton, S. C.	Tuscaloosa
Hanby, E. K.	Attalla
Jordan, D. C.	Guntersville
Jordan, J. W.	Ashland
Killgore, J. J.	Wadley
Leach, J. E.	Gadsden
Leach, Sydney	Tuscaloosa
Maples, W. E.	Athens
McCain, W. J.	Livingston
McCullar, J. A.	Russellville
McKenzie, A. B.	Tuscaloosa
Meigs, S. C.	Centerville
Moore, Elisha M.	Prattville
Moore, W. W.	Camden
Moorman, M. R.	Huntsville
Murphy, G. E.	Birmingham
Nabers, S. F.	Birmingham
Owsley, W. M.	Eclectic
Parris, Briggs	Geraldine
Sawyer, H. P.	Montgomery
Schoolar, T. E.	Randolph
Scott, Walter	Headland
Spruell, W. H.	Russellville
Stevenson, F. C.	Montgomery
Taylor, J. F.	Mobile
Tippin, P. H. M.	Brewton
Tippins, J. R.	Hartford
Ussery, C. J.	Ensley
Vandiver, H. G.	Trenton
Waldrep, A. C.	Red Bay
Whiteside, J. M.	Talladega
Williamson, E. O.	Gurley
Wilson, J. L.	Hackleburg
Wood, J. W.	Hanceville

THE FIFTY YEAR CLUB

This year Certificates of Distinction are to be awarded 12 physicians who have practiced their

profession for 50 years and therefore become members of the Fifty Year Club. It had been expected to award Dr. William Randolph Crook of Elba his certificate but he died on February 27. A posthumous presentation will be made his family. Those to receive certificates tomorrow morning are:

Chas. N. Carraway	Birmingham
Harry C. Crelly	Birmingham
Percy E. Godbold	Pine Hill
Arthur B. Harris	Birmingham
Charles E. Herrin	Cullman
Albert T. Kirk	Gordo
Edward L. McIntosh	Camden
Claude L. Murphree	Gadsden
Arthur W. Ralls	Gadsden
Samuel T. Shepherd	Birmingham
Benj. J. Teaford	Fairhope
Leonard B. Wilkerson	Shorter

AWARD OF PAST PRESIDENTS' PINS

In his message to the Association in 1951, President J. M. Weldon recommended that each retiring President be presented with a past president's pin, and that such an award be made also to all living past presidents. The recommendation having been approved by the Association, The Russell Hampton Co. of Chicago was asked to execute 25 pins according to sketch submitted—20 of the pins to be awarded at this session, the other five to be held for future needs. In addition, to Dr. Hubbard, whose pin will be awarded him by his successor in office on Saturday morning, pins will be presented the following past presidents at the conclusion of the Jerome Cochran Lecture tomorrow morning:

Robert Somerville Hill	1914
William Dempsey Partlow	1918
James Somerville McLester	1920
Joseph Davis Heacock	1925
Edwin Valdivia Caldwell	1929
William Groce Harrison	1931
Toulmin Gaines	1932
James R. Garber	1934
Charles A. Thigpen	1936
Edward Simmons Sledge	1938
Seale Harris	1939
James Monroe Mason	1942
Harvey B. Searcy	1943
Walter F. Scott	1946
Carl A. Grote	1947
Jesse P. Chapman, Sr.	1948
J. Paul Jones	1949
Frank C. Wilson	1950
Joseph M. Weldon	1951

A. M. A. DUES

Only brief reference need be made to this subject now since it has been dealt with in detail through correspondence with secretaries of County Medical Societies. Two new pieces of infor-

mation need to be disseminated and added to facts heretofore made available concerning dues to the American Medical Association. (1) Fellowship dues are no longer in effect. Membership dues of \$25 cover Fellowship for those who have made application therefor. (2) Those who have become delinquent in paying A. M. A. dues and wish to be reinstated will pay only the year of the delinquency plus the year of reinstatement.

PRESIDENTIAL APPOINTMENTS

As delegate and alternate, respectively, in the House of Delegates of the American Medical Association, President Hubbard appointed Drs. J. Paul Jones and D. G. Gill to succeed themselves, their terms to expire December 31, 1953.

Committee appointments were made as follows: Medical Service and Public Relations—F. M. Thigpen and J. O. Finney; Mental Hygiene—J. S. Tarwater; Maternal and Child Health—T. M. Boulware; Cancer Control—W. N. Jones; Prevention of Blindness and Deafness—R. J. Grayson; Postgraduate Study—Ralph McBurney; Physician-Druggist Relationships—R. E. Cloud; Anesthesiology—W. P. May; and Tuberculosis—L. O. Davenport. By action of the Association, the Committee on Industrial Medicine was recreated, and for its personnel President Hubbard named D. O. Wright, Chairman, R. A. Hamrick and E. A. Isbell.

STATUS OF COUNSELLORS-ELECT

Last year, two members—Murray C. Hollis and H. Sellers Holloway—were elected Counsellors. They have qualified as required by the Constitution of the Association and should be added to the Roll of Active Counsellors when the revision of the Rolls is made on Saturday morning.

OFFICERS TO BE ELECTED

Officers to be elected at this session are a President-Elect, a Vice-President for the Northwestern Division, to succeed Dr. J. G. Daves whose term has expired; and two Censors for five years to succeed Drs. Chas. E. Abbott and Robert Parker, whose terms expire.

There are to be elected, also, six Counsellors: From the 4th Congressional District, 2. French H. Craddock is to be elevated to Life Counsellor; the second term of seven years of Jerre Watson has expired. From the 6th, 1. The second term of seven years of C. E. Abbott has expired. From the 7th, 1. J. G. Daves' second term of seven years has expired. From the 8th, 1. H. M. Simpson's second term of seven years has expired. From the 9th, 1. J. R. Garber is to be elevated to Life Counsellor.

APPOINTMENTS TO BE MADE

Committees presenting vacancies because of expiration of term of members are Medical Service and Public Relations (E. G. Givhan and B. W. McNease), Mental Hygiene (Jack Jarvis), Maternal and Child Health (Hughes Kennedy, Jr.), Cancer Control (J. P. Chapman, Sr.), Prevention of Blindness and Deafness (Alston Calla-

han), Postgraduate Study (A. J. Treherne), Physician-Druggist Relationships (W. M. Salter), Anesthesiology (Alice McNeal), Tuberculosis (P. W. Auston) and Industrial Medicine (D. O. Wright).

It will be a responsibility of the next President to make appointments to fill these vacancies, and to name a delegate and an alternate to the American Medical Association to succeed Drs. C. A. Grote and G. A. Denison, respectively, whose terms will expire December 31, 1952.

ASSOCIATION FINANCE

The accounts of the Association for the year 1951 have been audited by Crane, Jackson and Wilson, Certified Public Accountants, Montgomery, and the audit constitutes the concluding pages of this report. Consideration of the audit reveals that in the operation of the affairs of the Association in 1951 disbursements exceeded receipts by \$2,334.16. Aside from the fact that cost of publication of the Journal exceeded revenues applicable thereto by \$698.65, there were certain extraordinary items of expense, as, for example, expense of delegates to the American Medical Association (\$1206.34); attorney retainer fees and expense (\$1140.75); and contribution to Gorgas Hall of Fame Committee (\$1000.00). The Secretary-Treasurer will discuss with the Board of Censors the overall financing of the Association and such conclusions as are reached will be made known to you by the Board.

The Officers and Members,
The Medical Association of The State of Alabama,
Montgomery, Alabama.

Gentlemen:

We have examined the cash accounts of the Treasurer of The Medical Association of The State of Alabama for the calendar year 1951, and have prepared the following statements:

Exhibit "A": Summary Statement of Cash Receipts and Disbursements for the calendar year 1951.

Exhibit "B": Statement of Cash Disbursements for the calendar year 1951.

Exhibit "C": Securities Owned at December 31, 1951.

Our examination included the tracing of all recorded cash receipts to the bank statements. All bank checks paid during the year were examined as to amount, signature and endorsement and were vouched to the record of cash disbursements. Cash balances were confirmed directly with the depositories.

Securities owned by the Association, listed in Exhibit "C", were verified by physical examination, in company with Dr. Douglas L. Cannon, on February 12, 1952, at the Safety Deposit Vault of the First National Bank of Montgomery, Alabama.

Respectfully submitted,
Crane, Jackson and Wilson,
By H. C. Crane, C. P. A.

Exhibit "A"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
SUMMARY STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
FOR THE YEAR ENDED DECEMBER 31, 1951

Cash Balance at January 1, 1951:

Checking Account—First National Bank	\$19,526.23	
Savings Account—First National Bank	1,463.10	\$20,989.33

Cash Receipts:

Association:

County Dues	\$21,553.00	
Counsellors	2,480.00	
Refunds to Medical Service and Public Relations Committee	146.42	
Portrait Fund	86.18	
Refunds of Phone Tolls and Postage	58.99	
Refund of Travel Expense Advance—W. A. Dozier, Jr.	50.00	
Sale of Association Rosters	22.00	
Interest on Savings Account	14.66	\$24,411.25

Journal:

Advertising	\$11,581.50	
Cooperative Medical Dividend	678.40	
Non-Member Subscriptions and Sales	116.90	
Excess Illustrations	25.60	12,402.40

American Medical Association Dues	12,110.00	\$48,923.65
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Cash Disbursements (Exhibit "B"):

Association	\$ 7,596.35	
Medical Service and Public Relations Committee	18,430.41	
Journal	13,101.05	
American Medical Association Dues	12,130.00	51,257.81

<i>Excess of Disbursements over Receipts</i>		\$ 2,334.16
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<i>Cash Balance at December 31, 1951</i>		18,655.17
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Represented By:

Checking Account—First National Bank	\$17,177.41	
Savings Account—First National Bank	1,477.76	\$18,655.17

Exhibit "B"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
STATEMENT OF CASH DISBURSEMENTS
FOR THE YEAR ENDED DECEMBER 31, 1951

Association:

Salary—Douglas L. Cannon, M. D.	\$ 600.00	
Annual Meeting:		
Guest Speakers	\$ 583.49	
Badges	102.10	
Expenses of Association Employees	61.81	747.40
Expense of Delegates to American Medical Association Meetings	1,206.34	
Printing and Stationery	2,211.26	
Attorney Retainer Fees and Expense	1,140.75	
Contribution to Gorgas Hall of Fame Committee	1,000.00	
Legal Services—Gressler Case	300.00	
Postage	114.00	
Committee on Health Service Insurance	89.10	
Audit Fee	61.53	
Guaranty Bond—Treasurer	50.00	
Filing Cabinet	40.75	
Office Supplies and Expense	12.41	
Lettering Fifty Year Club Certificates	9.45	
Bank Exchange	7.36	
Rent on Safety Deposit Box	6.00	\$ 7,596.35

Medical Service and Public Relations Committee:

Salaries:		
W. A. Dozier, Jr.	\$ 6,450.00	
Mrs. Martha Rea	2,325.00	\$ 8,775.00
Payroll Taxes		383.92
Travel Expense—W. A. Dozier, Jr.		1,800.00
Legal Fee		3,000.00
Printing and Stationery		1,165.65
Postage and Express		1,069.77
Rent		960.00
Postage Meter Machines		659.97
Telephone and Telegraph		318.88
Office Supplies and Expense		190.15
Dues and Subscriptions		61.52
Clerical Assistance		24.00
Painting Office		11.35
Advertising		10.20
		18,430.41

Journal:

Salaries:		
Douglas L. Cannon, M. D.	\$ 600.00	
William W. Wilkerson, M. D.	300.00	
Luette Kilpatrick	1,020.00	\$ 1,920.00
Printing and Mailing Journal		11,181.05
		13,101.05
Payment of National Dues to the American Medical Association		12,130.00
Total Disbursements		\$51,257.81

Exhibit "C"

THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
SECURITIES OWNED
DECEMBER 31, 1951

Quantity	Description	Date of Issue	Purchase Price	Redemption Value 12-31-51	Increase	Date of Maturity	Maturity Value
7	\$500.00 Series "F" U. S. Government War Savings Bonds No. D191057F to D191063F	7-1-43	\$ 2,590.00	\$ 3,059.00	\$ 469.00	7-1-55	\$ 3,500.00
6	\$500.00 Series "F" U. S. Government War Savings Bonds No. D220060F to D220065F	1-1-44	2,220.00	2,583.00	363.00	1-1-56	3,000.00
4	\$500.00 Series "F" U. S. Government War Savings Bonds No. D274010F to D274013F	6-1-44	1,480.00	1,722.00	242.00	6-1-56	2,000.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds No. D385709F to D385711F	5-1-45	1,110.00	1,252.50	142.50	5-1-57	1,500.00
11	\$500.00 Series "F" U. S. Government War Savings Bonds No. D386331F; D386371F; D386367F to D386369F; D386373F to D386-376F; D386378F to D386379F	11-1-46	4,070.00	4,383.50	313.50	11-1-58	5,500.00
3	\$500.00 Series "F" U. S. Government War Savings Bonds No. D677782F to D677784F	5-1-49	1,110.00	1,131.00	21.00	5-1-61	1,500.00
2	\$1,000.00 Series "F" U. S. Government War Savings Bonds No. M1510584F to M1510585F	5-1-49	1,480.00	1,508.00	28.00	5-1-61	2,000.00
1	\$10,000.00 Series "F" U. S. Government War Savings Bonds No. X355045F	5-1-49	7,400.00	7,540.00	140.00	5-1-61	10,000.00
			\$21,460.00	\$23,179.00	\$ 1,719.00		\$29,000.00

Report of Vice-President Daves

Northwestern Division

One is not aware of how fast time is passing until some obligation requires one to meet a definite date with a report of activities during a certain period of this time; neither can one really know the true meaning of what was involved in the old axiom "procrastination" steals valuable minutes and even weeks of this element that adds years to one's age and reduces the hours one has to comply with requests of given duties.

There have been many activities concerning things medical in the district during the year. Several new hospitals and health centers have been completed and put into use, others are in the process of construction and will soon be ready for service by the communities of their location. There are yet some places where these facilities are badly needed and some of them have plans under way which will go on to active construction as soon as sufficient funds are available.

One of the dark shadows in this picture is the lack of people to staff all these institutions adequately once they are ready for use. This situation will really prove whether "necessity is the mother" she has been alleged to be or not. One is constrained to believe she will come through for there seems to be a determined will among those most concerned and when this urge is unified and becomes all inclusive there must needs come a way. One would not be truthful in saying all's well on the Northwestern front for there are plenty of disturbing influences encountered weekly which if not correctly directed and rigidly controlled will provoke unhappiness in our professional way of life. Most of these aspersions are no doubt fruits of the unsettled and unpredictable changes through which society the world over is undergoing. Our profession as well as our laity is faced with problems that often place us in opposite positions in our opinions concerning their solutions, but if all concerned will use the proper approach, sustain an understanding attitude, and hold on to that individual faith that has made our country great there should be no hopeless results anticipated. None can claim immunity or declare himself unobligated either in the cause or cure of this status quo; each must give his best to make where he is a better place in which to live.

This report could not be complete without recounting something of the good time all had at the District Meeting in Jasper on October 16, 1951. The Walker County Medical Society left nothing undone in providing a most delightful occasion. The attendance was gratifying. The scientific program was very excellent. It was indeed a genuine pleasure to have had a part in the meeting, the last of this quadrennium. One would be most ungracious to end these statements without again thanking the members of this Association for the honor bestowed on me as Vice-President of the Northwestern Division. To every host Society and to every person who

helped make the programs of the four years a success one shall never forget to be thankful for your cooperation.

Report of Vice-President Treherne

Southwestern Division

The following report of the Southwestern Division is not one to boast or brag about, and the Vice-President is certainly not too proud to render such a report. I had planned during the past year to visit more counties and meet with more County Societies in the northern half of the district but due to insufficient time and unavoidable circumstances I have been unable to do this. I hope these counties will forgive me and I still promise to visit with them when and if I can. I have, however, met with several Societies and each time have had a very enjoyable visit. I regret that many of our Societies do not meet regularly or often enough, but I know that in many cases they have justifiable reasons. I hope that in the future, however, this will improve and when possible they will begin holding bi-county or tricounty meetings.

Last October I met with the Black Belt Postgraduate Medical Seminar at Selma. The program and the method in which it was conducted was very outstanding. I urge any one who has an opportunity to attend these meetings. You will thoroughly enjoy them and professionally it will be well worth your time. It is my opinion that such groups and meetings should be organized and held in other sections of the State.

I am extremely interested in the Academy of General Practice, and have met with it or its officers on several occasions. I feel that this is a growing and worth while organization and should command the interest of all doctors in Alabama. I hope that more physicians in this district will soon become members of the Academy.

On January 24, 1952, at the invitation of Doctor W. M. Salter, I attended a joint meeting of the committees of the State Medical and Alabama Pharmaceutical Associations on physician-drug-gist relationships at the Thomas Jefferson Hotel in Birmingham. This was a very worth-while meeting and the discussions were very informative. A report and recommendations resulting from this meeting will undoubtedly be published in the Journal of the State Medical Association. I advise that you all read this, and I hope that during the coming year we can have such a meeting in the Southwestern Division.

During the past year one scientific meeting was held in the Division, at the Country Club in Selma on October 25, 1951. The Dallas County Medical Society acted as host for this occasion. The meeting was outstanding and a real medical feast was enjoyed by the unusually large attendance. Seventy five (75) doctors registered for the scientific program. The doctors' wives were entertained by the Auxiliary, and immediately following the scientific program the Auxiliary entertained the doctors and their wives with a de-

lightful supper. Food and refreshments were in abundance. The Dallas County Medical Society and its officers deserve much credit for the success of this meeting.

In conclusion I would like to thank my friends for their fine spirit of cooperation. It has been a joy to work with you.

Report of Vice-President Finney

Northeastern Division

The Northeastern Division of the Association held a very successful meeting in Gadsden on January 17, 1952 with the Etowah County Medical Society as host. The meeting was initiated with a luncheon attended by members of the Medical Auxiliary of the Northeastern Division. The luncheon was followed by an excellent scientific program.

The Madison County Medical Society has already invited the Northeastern Division to meet in Huntsville on October 8, 1952. This meeting is to be held with the Medical Auxiliary of the Northeastern Division.

Nothing of unusual interest occurred during the year. The various County Societies comprising the district held meetings with fair regularity throughout the year. The Vice-President was not able to visit each County Society during the year.

It is anticipated that considerable time will be spent by the Vice-President and the Director of Public Relations with representatives from the constituent Societies within the next few months in reference to the Medical Practice Act.

Report of Vice-President Windham

Southeastern Division

There have been no unusual, glamorous, or sensational activities in medical practice in the Southeastern Division during the year covered by this report. We hope that, as doctors, we have contributed to the constant improvement of the mortality rate in the State. The report of the Bureau of Vital Statistics shows that Alabama now ranks fourteen among the states of the Union in mortality rates with a figure of 890.5 deaths per 100,000 population as compared with the overall national figure of 971.7 deaths per 100,000. It is our hope and will be our endeavor to improve this figure further.

Medical facilities in the Southeast are being improved steadily. During the year covered by this report, three so-called Hill-Burton Hospitals have opened. They are: the Lee County Hospital, Opelika, with a capacity of eighty-one beds and opened February 18, 1952; the Dale County Hospital, Ozark, with a bed capacity of forty-eight opened on August 23, 1951; and the Bullock County Hospital, Union Springs, with a bed capacity of twenty-eight, opened in July 1951. In addition to these completely new facilities, several previously operated institutions have in-

creased their capacity. Several counties have voted a hospital tax for the purpose of matching state and federal funds for hospital construction and for the operation of the institutions once they are constructed. In Prattville, of Autauga County, it is anticipated that a forty-one bed privately owned institution will be dedicated within a few months.

Reports would indicate that the Division is also gaining in number of practicing physicians. As the older physicians are removed from practice, either by death or retirement, young men are taking their places. The balance sheets show a favorable balance toward an increase in actively practicing doctors. In that most of the Division is relatively rural, this is a very favorable trend, and, in spite of the fact that the area is principally rural, many of the incoming physicians are well trained in the various medical specialties.

The Division held only one meeting during the year. This was in Dothan on January 31, 1952, and was held in conjunction with the Division Auxiliary and we feel that the ladies definitely added to the success of the meeting. It was well attended. Ninety-five doctors, forty-seven doctors' wives and several out-of-the-Division distinguished guests were present. The professional program of both the medical organization and the Auxiliary was held in the afternoon. This was followed by a social hour and dinner that evening. The Division was entertained by the Houston County Medical Society and it did an admirable job. All attending the meeting seemed to enjoy the programs and the entertainment.

Basing some of my actions on experiences of those who preceded me, my personal activities have been relatively limited as regards Division travel and personal contact with County Medical Societies. As the baby Vice-President of the Association, I called a meeting of the Presidents and Secretaries of the seventeen counties making up the Division for a general discussion of activities to be carried on by the Division as a whole during the year 1951-52. This meeting was held in Dothan on August 13, 1951. Only eight counties had representatives at the meeting. The poor attendance was a disappointment. The basic reason for this meeting was to find out how active the group comprising the Division wanted to be during the year and whether or not they would like to speak collectively or individually on the numerous important issues which are constantly coming up for decision by practicing physicians. This meeting was attended by our Association President, Doctor Hubbard. In spite of the poor attendance, discussions were lively and a few important decisions were made. The consensus as regards Division meetings was that at least one meeting should be held each year, the program should be made up principally of men practicing in the Division, and should be supplemented by men from out of the Division who had had larger experience in subjects to be discussed in order that the group attending the meeting might be able to hear authorities discuss problems pertinent to their practice. The use of Division practitioners would give them an opportunity to

benefit personally by the preparation and presentation of medical subject material. Another subject discussed was the medical care of the indigent in the Division. No definite conclusions were reached in regard to what could be or should be done about this matter. All agreed that something should be done in order to assure them of adequate medical care.

I attended the public relations meeting in Montgomery on March 16, 1952, and thought that the program presented and the recommendations for its successful prosecution were timely.

During the year 1952-53, I hope to have established in all County Medical Societies an active public relations committee. It will be requested that these committees be directed along local and state lines. It is our duty as doctors to instruct the public in subjects pertaining to medical practice and hospitalization of patients. Active public relation committees can do this.

In spite of what appears to be one of the most prosperous times in the history of our country, the local and state governments are passing out more money in the form of relief, financial aid and other social service functions than ever before. The Bible states that the poor will always be with us and from the outlay of money being made by the various social service organizations and governmental agencies it seems that general prosperity does not reduce, to any practical degree, the number of indigent in our State. In that they are with us and we as physicians feel a responsibility for their medical care, some active program should be instituted through which this care can be made available. I believe this program should be on a local level and am, as most of you, heartily opposed to any type of national medical care. I shall attempt during the incoming year to get some type of satisfactory program started in the Southeastern Division.

I should like to recommend the establishment of grievance committees where patient and doctor alike can go to smooth out differences which they might have as regards type of medical service rendered or cost of that care. Where these committees are in operation they are doing a fine job. Small counties could not individually finance their own grievance committees, but by consolidation, yet remaining relatively local, the administration and cost of operation could be met.

I would further recommend that the entire medical profession take a little time out to explain to the public through any means available why the cost of medical care has increased. Modern medicine calls for more than prescription writing and it is because of the increased number of gadgets, parenteral fluids, high priced drugs and other items that their care has increased in cost. The patient so often does not consider the shortened period of illness but simply looks at a bill which covers a period of one to two weeks medical and hospital care and considers the figure exorbitant, instead of comparing it with what happened to his father with a similar illness. We

can dispel some of this attitude by adequate explanation.

We as doctors are extremely lethargic in the conduct of business which pertains to all of us. I think that my experience during the past year emphasizes this point. A less than 50% representation at a called meeting, 60% answering of simple letter communications, and the relatively small percentage of attendance at organizational meetings stress our non-interest in affairs which pertain to our business. The A. F. of L. or C. I. O. would not tolerate this attitude. This is not a suggestion that we consider ourselves as such an organization, but it simply is presented to call our attention to the fact that we should be about "our Father's business." I believe that when we as doctors get more interested in our overall relationship with our patients and become more interested in our organizational activities we will regain the place held by our forefathers.

Message of the President

Since the first meeting of our Association which I attended in 1913, I have been greatly interested in its affairs and have looked with admiration at the doctors who shaped its policies and were influential in its internal politics. When I became a member of the Association, the total financial resources of our health system were \$25,000.00. Today, the expenditure of the Health Department is annually over \$4,000,000.00, to say nothing of the \$5,000,000.00 of Hill-Burton money that was dispensed for the building of hospitals last year.

To be President of an organization that holds a unique position among the medical associations of the United States and whose public health system has been for many years taken as a model by foreign nations is no empty honor and I assure you that I greatly appreciate this honor. It is with a feeling of humility that I must admit my inadequacy in carrying out the duties of this exalted position. Being President is not an easy job for a busy doctor, as most of us are these days, and if I have not measured up to the qualifications that you expected, I ask your pardon.

In my attempt to study the problems that confront the medical profession I have been impressed with the fact that never before, unless it was in the early years of the Association following the Civil War when, under the remarkably able leadership of Dr. Jerome Cochran, the Association was formed and its constitution and policies adopted, have the problems been more important and the necessity of solution more urgent. In those early days, three-fourths of a century ago, the doctors of Alabama were concerned more with intrastate affairs. Today, the questions that must be answered and the policies that must be formulated are of national importance. We doctors must realize that we not only must work as individuals in our County and State Societies, but we must work as members of the American Medical Association, formulating the policies that will affect the medical profession of the United States as a whole.

In my study of the forces that are disturbing the medical profession today it has been a satisfaction to note the growing interest that doctors throughout the country are showing in combating the tendency toward socialism in our profession, just as the people as a whole are submitting to unprecedented taxes to support a defense program against world communism. This latter expenditure is questioned by some of our best political leaders, but there is no question as to the necessity for us doctors to sustain our position as independent practitioners. To be regimented or not regimented is a question that we perhaps have waited too long to face. But more about this presently.

As President of your Association I have had the honor of speaking before a number of County Medical Societies: Jefferson, Montgomery, Mobile, Tuscaloosa and Dallas. I have spoken to them of the dangers that beset us and the necessity for offsetting these dangers. I have been impressed and flattered on most occasions by the large attendance and interest in the affairs of the Association that the members have shown.

As you will note from the list of doctors who have taken our state examinations or who have been admitted by reciprocity since the last war, we have had a large number of doctors from other states licensed to practice in Alabama. It is highly important that these men be acquainted with the workings of our health system in Alabama and that their enthusiasm be stirred to carry on its affairs in traditional manner. I would suggest that the County Societies, particularly the larger ones, devote some of their programs each year to the organization and policies of the State Association.

Some of the most successful meetings, both from a scientific and social aspect, have been the sectional meetings. Dr. Finney, Vice-President of the Northeastern Division, had a most successful meeting in Gadsden with a large attendance; Dr. Windham of the Southeastern Division had a most enthusiastic meeting in Dothan. I attended both of these meetings and was most impressed with the fine attendance, enthusiasm and camaraderie that existed. I was unable to attend the Northwestern and Southwestern sectional meetings but have been told that these too were most successful under the guidance of Dr. Treherne and Dr. Daves.

One of the important features of these meetings was the participation of the ladies of the Auxiliaries. In Gadsden they sat with us during the luncheon and later held a session of their own. In Dothan the scientific session was followed by a social hour and dinner in which the ladies participated and where the talks were of a nature to interest both the doctors and their wives.

I would be remiss if I did not say more about the activities of the ladies of our Auxiliaries than these passing remarks. Only during the last few years have we had a really active Auxiliary. I have had the privilege of being guest at several of their meetings. They have been unusually well

attended and great interest has been shown. I feel very strongly that in the future if we doctors wish to accomplish anything in a political or legislative way, we will do well to call on our wives in the Auxiliary for help.

I am about to discuss a subject which I approach with fear and trembling. I might preface this discussion with the statement that my grandfather Hubbard came to Alabama in the 1830's when the Indians still occupied eastern Alabama. My mother's people were direct descendants of Governor Treutland, the first territorial governor of Georgia who was drawn and questioned by the Tories at the beginning of the Revolution. So I am speaking as a Southerner and an Alabamian of long standing. The question that I wish to propound is: "Shall the Negro doctors be members of the Medical Association of the State of Alabama?"

To state it briefly, the Negro doctors desire this privilege for the following ostensible reasons:

1. To become members of the American Medical Association.
2. To enable them to obtain liability insurance against suits for malpractice.
3. To enable them to serve on the staffs of hospitals that demand membership in the County and State societies before they can be on the staffs of these hospitals.

There may be other secondary and perhaps more fundamental reasons that prompt the Negro physicians to ask for this privilege but the above are the logical ones.

The fact that we, the members of the State Medical Association, must face is that, by education and by the qualifications that we ourselves have prescribed, these doctors are recognized as reputable physicians. As such, why are they not permitted to become members of our County Societies and State Association? The answer is clearly for social, not professional, reasons. If we are to settle this question on a social basis, the status quo is undoubtedly the answer. But are the County Medical Societies and the State Association social organizations?

During the last war a group of doctors in one county decided they would not accept any doctors into the Society until after the war. Several doctors whose names were presented to the Society were blackballed. Their sponsors, members of the Society, then appealed to the State Board of Censors. In the absence of any evidence that these men, who were proposed for membership, were guilty of any unprofessional conduct, the Board was forced to override the vote of the County Medical Society and to order these men installed as members. This was done.

Recently two Negro physicians were sponsored each by two members of a County Society and were proposed for membership. They were blackballed. Suppose the sponsors of these Negro physicians appeal the decision to the State Board of Censors. Will the State Board uphold the action of the County Society or, in the ab-

sence of any evidence of unethical or unprofessional conduct on the part of these Negro physicians, decide as they did in the case of the other Society, that the two doctors must be installed as members of the Society?

I might continue at length to discuss the social and psychologic aspects of this problem but if the State Medical Association exists to promote the health of the citizens of Alabama, to insure them competent medical practitioners, then there is no place for purely social qualifications for membership in our Association.

I have discussed this subject not only with members of our State Association but with some of the leading members of the Negro profession. I am not sure just what should be done or just when is the proper time to do it, but I am certain that we have a problem that we must solve in the near future and that we should give serious thought to its solution and do something about it.

The progress that medicine and surgery has made in the past quarter of a century would seem phenomenal were it not that at the fast pace at which we travel much of it is taken for granted and much of it, as in preventive medicine, assumes a negative aspect. For instance, it is difficult for the younger doctors, to say nothing of their patients, to realize that only a short while ago malaria and typhoid were serious every day problems both as to their mortality and especially their morbidity. Much of the illiteracy and backwardness of the Southern farmer and mill worker could be blamed on the malaria and hookworm from which they were chronic sufferers. Any *thinking* person must credit the medical profession for these changes. But very few people bother to think.

The discovery of antibiotics has changed the picture as to infections. Yet, with all this progress which not only the medical journals but the newspapers and popular magazines comment on daily and for which the medical profession must be given credit, the status of the doctor in the opinion of the public has probably deteriorated. What I mean by this is that although as a specialist the doctor ranks high with the laity, as a man he is not as well loved and respected as was the doctor of twenty-five years ago.

I shall mention a few of the complaints that are registered against us doctors:

1. The services of a doctor cannot always be procured, especially at night and on week-ends.

2. The matter of fees: Although it is probably true that the average middle income family spends more on their automobile, movies, and drinks than they pay to their doctor, many of them resent these medical fees, especially when they pay a high price for x-rays and other examinations and no pathology is found. That there is a great divergence in the size of the fees charged by Alabama doctors is shown by the answers to the questionnaire sent out by Dr. Garber's committee. The fee for puncturing the ear drum ranged from \$5.00 to \$200.00. The fees

for an appendectomy had the same limits. These figures were for the low income group. Certainly there should be more uniformity in the scale of fees.

It is often pointed out that we should settle with a patient, whenever possible, before an operation, as to just what his probable expense will be. It matters little to the patient whether he is paying the doctor or the hospital. What disturbs him is that he is getting a large bill. Bills should be itemized and explained to the patient.

A frequent complaint that I hear from well-to-do people is that doctors prescribe so many expensive drugs even for simple maladies.

It probably would be helpful in our public relations if the doctors of each Society would agree on a general scale of fees and that the grievance committees function so that disgruntled patients could appeal to them.

3. The third item which I would mention is not so easy to define. The doctor has, or at least the people think he has, put himself in a category apart from the *hoi polloi*. I can remember doctors in Montgomery, Mobile and other towns who were leaders in their communities. Doctors are still respected for their knowledge and skill but as men and citizens we have not taken part in the affairs of our communities as we should. We are always too busy.

If the public has these and other complaints against us doctors, we should strive to correct these errors, not only to please the public but because their good opinion and sympathetic understanding of our problems is necessary if we are to preserve our own freedom of action.

More than ten years ago Dr. Parran, Surgeon General of the Public Health Service, with President Roosevelt's sanction, had worked out a scheme of socialized medicine which would have regimented the doctors, nurses and hospitals. Somehow Dr. Parran was sidetracked and is now Dean of a School of Public Health, but Mr. Truman has appointed a worthy successor in the person of Mr. Oscar Ewing. Mr. Ewing is more versatile than Dr. Parran. If he can't get in by the front door he tries the side door and even the back door. His first try was compulsory health insurance, but failing in this he would come in the side door of federal aid to medical education.

So far we have forestalled the movements of Dr. Parran and Mr. Ewing but it has cost us a lot of money. We doctors have to pay the American Medical Association \$25.00 each and the A. M. A. in turn spent last year \$1,500,000.00 to keep up the political fight in Washington. Apropos of this \$25.00 assessment of the American Medical Association, Dr. Cannon tells me that practically all the members of the Alabama Association have paid their dues.

Doctors have been averse to participating in politics but with the many pressure groups operating in Washington we find ourselves completely out of the running if we do not stand up for our rights. If there are no new privileges

that we may strive for, at least we can say, as did a great patriot, "millions for defense" if this becomes necessary.

For many years a thorn in the flesh for us doctors has been the illegal practice of the chiropractors. Our medical practice laws should control them but it is necessary to convict them in the circuit courts. The County Societies have attempted this and, finally, the Board of Censors hired the best lawyers it could find to prosecute these illegal practitioners. Our efforts have been in vain; the juries will not convict them.

During the last session of the Legislature your State Board, after much thought, had introduced a bill requiring all members of the healing arts to take a basic science examination. This bill was patterned largely after the Virginia law. The chiropractors, however, wish to have their own board of examiners. At any rate, our bill was lost in the Committee. Why? There were very few doctors on Goat Hill working for its passage, but there was a large representation of chiropractors. If we are to protect ourselves and the public from socialized medicine in Washington and illegal practitioners in Alabama, we must work to preserve our rights.

A few Sundays ago we had a meeting in Montgomery to consider the bill which would change the Medical Practice Act and regulate chiropractors. Representatives from twenty-nine counties were present. This bill is a compromise but one which your Board has felt to be necessary. It should be studied and, if you agree to its usefulness, we should all work to have it passed at the next Legislature. Our concerted effort is necessary.

Before concluding this talk I must take time to speak briefly of our Medical School. It is common knowledge that we are greatly in need of doctors in rural communities and nurses everywhere. These the Medical School can provide. I have had the opportunity of sitting in with the Advisory Committee to the Dean. The problems that Dr. Durrett and Dr. Gallalee are confronted with are large and serious. Dr. Durrett is making progress but the School and Hospital need the support and interest of all the doctors of Alabama.

Having served for a number of years as a member of your State Board and for the past year as your President, I am sure that I shall have a feeling of loneliness in thus severing all official ties with the Association. But I hope that I do not suffer the fate of the old soldier "and just fade away," but that as one of the rank and file I shall be permitted to continue working for the progress of our profession and the health of our people.

Scientific Program

Drs. Buford Word, Claiborne Blanton and C. D. Howe, Birmingham, discussed Aids in the Diagnosis of Ectopic Pregnancy.

Dr. John B. Youmans, Dean, Vanderbilt University School of Medicine, Nashville, Tennessee, presented a paper on Macrocytic Anemia.

Coin Lesions of the Lung were dealt with by Dr. E. L. McCafferty, Jr., Mobile.

Dr. Donald B. Sweeney, Birmingham, read a paper on Pediatric Neurologic Conditions and Their Surgical Management.

Miscellaneous Business

The Secretary of the Association read appeal filed by Dr. H. A. Darby, Athens, in behalf of Dr. D. E. Jackson who had been denied membership in the Limestone County Medical Society; also a resolution sent up by the Morgan County Medical Society relating to Alabama's hospitals for the insane.

Afternoon Session, Thursday, April 17

2:00 P. M.

The Use of the Bone Bank was discussed by Dr. S. Ralph Terhune, Birmingham.

The Duodenum Below the Cap was the subject of the presentation of Drs. W. F. Reynolds and E. M. Moore, Montgomery.

Dr. Francis F. Schwentker, Johns Hopkins Hospital, Baltimore, discussed the Modern Therapy of Rheumatic Fever.

The Treatment of Acute Hepatitis was dealt with by Dr. James A. Davis, Jr., Birmingham.

Dr. R. C. Bibb, Huntsville, read a paper on Management of Fractured Hips in Small Hospitals.

Dr. W. F. Harper, Selma, discussed The Treatment of Endocervicitis.

Social Events

Mr. A. J. Price, of Price Drug Co., Montgomery, was host at an open house for the physicians and their wives from 5 to 6 P. M. at the Montgomery Country Club.

Durr Surgical Supply Company, Montgomery, entertained at a barbecue from 6 to 7 P. M. at the Country Club.

Second Day

Friday Morning, April 18

9:00 A. M.

Dr. Franklin Payne, University of Pennsylvania School of Medicine, Philadelphia, discussed the Care of Post-Menopausal Patients.

Plastic Surgery of the Renal Pelvis was the subject of the presentation of Dr. Robert B. McIver of Jacksonville, Florida.

Dr. Edward Waters, Jersey City, N. J., read a paper on the Surgical Management of Postpartum Hemorrhage.

The Jerome Cochran Lecture was delivered by Dr. Richard Cattell of Boston. His subject was Carcinoma of the Colon and Rectum.

President Hubbard awarded certificates of distinction to the following physicians of Alabama who have been practicing their profession for fifty years:

THE FIFTY YEAR CLUB

CLASS OF 1952

Carraway, C. N.	McIntosh, E. L.
Crelly, H. C.	Murphree, C. L.
Godbold, P. E.	Ralls, A. W.
Harris, A. B.	Shepherd, S. T.
Herrin, C. E.	Teaford, B. J.
Kirk, A. T.	Wilkerson, L. B.

President Hubbard also recognized all of the Association's living past presidents by presenting to as many as were able to be in attendance or to their designated representatives a past president's pin. Those who received pins, with the year of their presidency, are as follows:

THE ASSOCIATION'S LIVING PAST PRESIDENTS

Robert Somerville Hill	1914
William Dempsey Partlow	1918
James Somerville McLester	1920
Joseph Davis Heacock	1925
Edwin Valdivia Caldwell	1929
William Groce Harrison	1931
Toulmin Gaines	1932
James R. Garber	1934
Charles A. Thigpen	1936
Edward Simmons Sledge	1938
Seale Harris	1939
James Monroe Mason	1942
Harvey B. Searcy	1943
Walter F. Scott	1946
Carl A. Grote	1947
Jesse P. Chapman, Sr.	1948
J. Paul Jones	1949
Frank C. Wilson	1950
Joseph M. Weldon	1951

Miscellaneous Business

Georgia's fraternal delegates, Drs. E. V. Patrick, Carrollton, Enoch Callaway, La-Grange, and W. P. Jordan, Jr., Brunswick, were extended the courtesies of the floor; as

was Mr. Phil Hudson, Opelika, representing the Alabama Pharmaceutical Association.

The Secretary of the Association announced vacancies as follows in the College of Counsellors:

Vacancies that will present in the College of Counsellors at this meeting of the Association are as follows and for the reasons set forth:

4th Congressional District—2. French H. Craddock is to be elevated to Life Counsellor; the second term of seven years of Jerre Watson has expired.

6th Congressional District—1. The second term of seven years of C. E. Abbott has expired.

7th Congressional District—1. J. G. Daves' second term of seven years has expired.

8th Congressional District—1. H. M. Simpson's second term of seven years has expired.

9th Congressional District—1. J. R. Garber is to be elevated to Life Counsellor.

Afternoon Session, Friday, April 18

2:00 P. M.

Dr. James S. DuBois, Enterprise, read a paper on Medullary Fixation of Fractures of Long Bones.

Dr. James E. Scarborough, Jr., Emory University School of Medicine, Atlanta, discussed the Management of Cancer in the Neck.

Dr. Tinsley Harrison, Medical College of Alabama, Birmingham, dealt with the Interpretation of Palpitation.

Dr. William H. Tucker, Mobile, presented a paper entitled The Treatment and Prognosis of Amebiasis.

Dr. Robert K. Oliver, Montgomery, reviewed the Present Concepts of Rehabilitation of Tuberculous Patients.

The afternoon session was concluded with a paper on X-Rays for Backache by Dr. Hugh F. Hare, Lahey Clinic, Boston, Mass.

Miscellaneous Business

Greetings were brought the Association by Mrs. Harold F. Wahlquist, President, Woman's Auxiliary, American Medical Association, Minneapolis.

Social Events

The Montgomery County Medical Society entertained the doctors and their wives at a reception and dance at the Country Club from 9 P. M. until midnight, honoring, especially, President and Mrs. Hubbard.

(To be concluded in the June Journal)

STATE DEPARTMENT OF HEALTH

BUREAU OF ADMINISTRATION

D. G. Gill, M. D.

State Health Officer

THE BLACK WIDOW—BEAUTIFUL BUT DANGEROUS

It is one of life's ironies that something so beautiful can be capable of so much harm. We think of Cleopatra's fatal beauty and the power for evil she was able to wield because of it. And of course she was not the only beautiful woman of history who has been able to affect the course of empire by her physical charms.

Women have not been alone in their power to do mischief to individuals and the masses through the power of physical beauty. We are told, for instance, that one of our Presidents, whose administration was notorious for its corruption, had a great fondness for beautiful horses. Almost anyone could win his favor, and favors, by presenting him another one or two to add to his rapidly growing stable. Beautiful dogs have played their part in many a shady deal. And so have any number of other beautiful animate things.

An insect of striking beauty is the Black Widow spider. And, like those other beautiful things we have mentioned, and others, she is capable of causing great unhappiness to us humans. No doubt you have heard about her power to poison people who come within her small world. You may have been poisoned like that yourself. More likely, you have one or more friends and acquaintances who have been.

Anyone who has seen a Black Widow spider—and, unfortunately, most of those who are bitten do not see the ones that bite them—attest to her beauty. Most of those who are in position to form a calm, unbiased opinion regarding her physical appearance say she is not only beautiful but strikingly beautiful. That is in her own way of course. No insect can, strictly speaking, be said to be beautiful in the same way that a woman may be. Each class of beautiful things has

its own standards of beauty. The members of each group are beautiful according to its own standards.

The average Black Widow spider is about like an old-fashioned shoe button in size, although some are considerably larger than that. A few have been found that measured half an inch in length or even more. Her body has a high shine, or sheen, reflecting light like a highly polished floor or even a priceless jewel. As you might assume from her name, she is black. But her name is somewhat misleading at that. For she is not altogether black. That blackness does not extend to her abdomen: On it nature has placed a crimson-yellow-edged spot shaped like an hour glass. There are examples even of a spot on the back as well. In some rare instances there are two spots of that kind on the back. This spot, or those spots, on the back are sometimes yellow. Sometimes they are red. The Black Widow spider has even been known, in rare instances, to have both red and yellow spots on her back. So it certainly would be incorrect to say that she is altogether black. Nevertheless, her blackness is probably her outstanding physical characteristic.

You have heard that beautiful women are often terribly poor housekeepers. (Apparently, there is no tangible relationship between womanly beauty and the household virtues.) In the same way, this, one of the most beautiful of insects, is a terribly poor web-spinner. In fact, about the first thing one notices upon seeing a Black Widow's web it that it represents about the sloppiest job of web-spinning imaginable. It looks like the work of the rankest kind of rank amateur. As a public health worker observed some time ago, "it is about as different from the web of any other spider as a cabinet or chest made by an expert craftsman is from one made by a jack-leg carpenter."

However, you should not have too great a contempt for that web, sloppy though it is. For it does quite satisfactorily what it is supposed to do. Like other spider webs, it

has one primary purpose. That is to snare flies and other insects which the Black Widow needs to eat to keep alive. And even a sloppily made web is good enough for that purpose. At least there is no reason to think Black Widows are more likely to go hungry than any other spiders.

Beautiful women may or may not have the virtue of patience. Some do and some do not. But the Black Widow has this virtue to a fine point. If you watch her for a long time, you will not see her darting from place to place in her web. She stays put. Taking up her position near the web's center, she remains virtually motionless for a long time. But, when the occasion calls for action, she is off with a start. Just let a fly or some other insect become enmeshed in those coarsely woven strands. She goes into action in a manner suggestive of the lion or leopard, biting it furiously. If it cannot be disposed of in that way, she calls her web into play. By skillful maneuvering, she gets her antagonist hopelessly enmeshed in those coarse strands. Then it becomes as helpless and as incapable of defending itself as a lion caught in a net. After that it is an easy and simple matter to kill it.

Do not think from what has been said that the Black Widow is a particularly vicious insect. The truth is that she is not. Like the rattlesnake, which is a dangerous thing when cornered, the Black Widow spider would much rather not bite human beings, if she has much of a choice. Those who are bitten usually frighten her or make her think, in her confused way, that she is being hemmed in and prevented from escaping. Practically none of the human victims of her bites know they are anywhere near the insect at the time. They ram their hands into dark corners or walk over spots that they cannot, or do not, see.

What happens when you or somebody else is bitten by a Black Widow?

The first reaction, or symptom, is pain. Actually, it would be more correct to use the plural term. For the Black Widow spider victim experiences not a single isolated pain but many pains. They are felt first at the place where you were bitten—the hand, the leg, the chest or wherever a wandering insect may reach. (Sonny Tufts, the actor, made headlines some years ago by being bitten on the eyelid while asleep.)

That pain at the site of the bite turns out to be just the starting point for many others in many other parts of the body. Those others radiate from that starting point, and before long the victim seems to be feeling them everywhere. However, he is especially conscious of pain in the abdomen. Perhaps this abdominal pain is the most dependable symptom of Black Widow poisoning. (Unfortunately, it is also associated in most people's minds with appendicitis. So the patient may actually have appendicitis when he thinks he has been bitten by a Black Widow spider. And vice versa.)

Other symptoms of Black Widow spider poisoning may help the patient differentiate between it and appendicitis. These include cramps, difficulty in breathing, or labored breathing, muscle spasms, dizziness and skin rash. Some or all of these may appear in a particular instance. A few victims even have convulsions. While either a child or an adult may have convulsions, a child is more likely to do so. A child will also probably have them sooner after being bitten than an adult.

One peculiarity of Black Widow poisoning is that it affects the nerves. This makes the victim highly nervous in many cases. If he should take his temperature soon after being bitten, which he is unlikely to do, he would be almost certain to find his temperature subnormal. But that is only a temporary condition. Soon it starts rising and in a relatively short time is well above normal. There is almost always a sharp increase in the pulse rate, which reacts quickly and sharply to changes occurring in the body, from emotional upset to serious illness.

Sometimes the person bitten by a Black Widow is fortunate enough to have this misadventure occur in or near his home. At other times he is at some distance from home. In either case, he should obtain medical treatment as soon as he can. This is too serious a condition for him to take a chance with self-medication.

You may have heard that whiskey is the prime medicine for Black Widow spider poisoning. If you have, forget it. For, with this form of poisoning, as with snakebite, taking alcohol into the body is the one thing that should not be done. A well known public health official expressed himself em-

phatically upon the unwisdom of mixing whiskey with either snakebite or Black Widow poisoning. He said: "This (whiskey) or any other alcoholic beverage is just about the worst possible medicine for both and should never be resorted to under any condition."

There is considerable difference of medical opinion regarding the danger inherent in Black Widow poisoning. Some members of the faculty of the Medical College of Virginia reported that about one Black Widow spider bite out of every 30 reported in that state had brought death to the victim. A somewhat similar view, but giving a more serious picture of the victim's chances of recovery, was expressed sometime ago by Dr. (Ph. D.) A. I. Ortenburger. Dr. Ortenburger said at a Therapeutic Conference on the bites of venomous animals (including venomous insects) sponsored by the University of Oklahoma School of Medicine: "The toxin (of the Black Widow spider), incidentally, is believed to be about 15 times as potent as that of our poisonous snakes and something like five per cent of the cases are fatal. That figure seems high, but it has been published." Dr. Ortenburger may have obtained his information from the Smithsonian Institution, in Washington. One of the Institution's annual reports stated, as he did, that the venom of the Black Widow spider was about 15 times as strong as that of a rattlesnake. This conclusion, we are told, was based upon extensive experiments. They showed, the report declared, that it required only 1/15 as much Black Widow venom as snake venom to kill a certain number of rats of a certain weight each. Also sobering to those inclined to take the Black Widow poisoning danger lightly is the testimony of a group of Fresno County (California) physicians. Its gist is that children's deaths from this cause are by no means rare.

Fortunately, other record-keepers have been able to make more encouraging reports. Some time ago, for example, the Fresno County General Hospital and the Los Angeles General Hospital reported that all 112 cases they had treated over an extended period had recovered.

What about protection against the ill effects of Black Widow spider poisoning after one has been bitten? Is there an antivenom effective against this type of poisoning in the

same way that other types of antivenom may save your life or at least save you much suffering after you have been bitten by a rattlesnake?

The answer is "Yes." However, its availability does not appear to be widely known. Let us refer to Dr. Harold G. Muchmor's observation at that same Therapeutic Conference at the University of Oklahoma School of Medicine:

"Results of antivenom treatment (against Black Widow poisoning) haven't been widely reported. It isn't used very much and nobody knows how good it is. D'Armour said that his experimental work showed it was good and that seems to be the consensus. It is available, but most doctors don't seem to know that it is available. Pain, relief of the pain, and sedation of the patient"—that is, quieting or calming him—"without depressing respiration seem to be the biggest part of the treatment."

For a long time it was assumed that the Black Widow was found almost exclusively in such out-of-the-way places as attics, cellars, out-houses, etc. But she has been found almost everywhere. *The Chicago Tribune* had a story a few years ago about one that had been found on the fifteenth floor of a Cincinnati office building. Housewives are urged to be on the lookout for these troublesome insects all over the house. The use of moth balls is recommended to keep them off shelves and out of drawers.

The Black Widow does not rank among the major menaces to life and health in Alabama or anywhere else. But she needs to be reckoned with. She can give you several hours of extreme physical pain. She may keep you in mental anguish for a long time. And she may even cost you your life. So take her seriously. Be on the lookout for her whenever you are around the places where she is most likely to be found.

The main responsibility and opportunity of diagnosing pulmonary tuberculosis in the elderly lies with the general practitioner; for most of them seek his advice on account of symptoms, and an awareness of the prevalence of the disease in these age groups should lead the practitioner to have chest radiography and sputum examination performed in all cases before diagnosing chronic bronchitis and emphysema—*M. B. Paul, M. D., The Lancet (London), August 11, 1951.*

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph. D., Director

SPECIMENS EXAMINED

March 1951

Examinations for diphtheria bacilli and Vincent's	337
Agglutination tests (typhoid, Brill's and undulant fever)	898
Brucella cultures.....	12
Typhoid cultures (blood, feces, urine)	675
Examinations for malaria	224
Examinations for intestinal parasites.....	14,966
Serologic tests for syphilis (blood and spinal fluid)	30,813
Darkfield examinations	4
Examinations for gonococci.....	1,674
Examinations for tubercle bacilli	3,087
Examinations for meningococci	3
Examinations for Negri bodies (microscopic)	81
Water examinations.....	1,592
Milk and dairy products examinations	4,108
Miscellaneous	2,387
Total	60,861

BUREAU OF SANITATION

Arthur N. Beck, M. S. in S. E., Director

THE OYSTER AND SOME OF ITS CHARACTERISTICS

Contributed by

U. D. Franklin, B. S., M. S.

The oyster, though simple looking, is a perplexing creature. It is mute, all but motionless, phlegmatic and devoid of any expression. If it had a brain, which it hasn't, the oyster probably also would be stupid. Doing little or nothing all of its life, it manages to be inscrutable and erratic even at that.

Oystering is important along thousands of miles of the American coast. It is a source of much food and many jobs. The oyster badly needs a friend. This harmless vegetarian leads a life of total respectability, staying strictly at home, doing next to nothing, and molesting no living creature. Its reward for this circumspection is to be drowned by spring floods, torn from its moorings by fall storms, or attacked by its numerous enemies. The oyster is an egg layer. From such eggs as survive for five to ten hours there emerge microscopic and insect-like creatures which are oysters in the larval stage. For a little while the oyster is a free-swimming animal, able to roam and rove. At this stage it looks like a water-melon seed ringed with briskly moving whiskers. This gay and giddy springtime is brief—about 18 days on the average. Then the oyster has had enough of roistering, yearns for security, and is ready to settle down. It does so, literally.

There are strong parallels to human behavior throughout the oyster's career. Now it is ready to take up the oyster's true estate, the cares of oysterhood. It is a period of metamorphosis, like that from tadpole into frog. What the oyster wants is roughly what the young human being wants as he hunts for a job. A good connection, something to cling to. Oysters at this stage are called spat. The day of crucial importance to both oyster men and oysters is when the spat begin settling to the bottom like sugar in coffee. This is called "spatfall," "setting," "striking" or "attaching." Though this is an act of resignation, renouncing all motion, it is perilous. The oyster may descend like manna into the jaws of baby star fish, jelly fish and numerous other enemies. It may

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1952

	1952		E. E.*
	Jan.	Feb.	Feb.
Typhoid and paratyphoid	4	3	3
Undulant fever	0	0	2
Meningitis	9	17	16
Scarlet fever	50	36	64
Whooping cough	55	182	94
Diphtheria	20	8	31
Tetanus	1	2	2
Tuberculosis	178	191	200
Tularemia	2	1	2
Amebic dysentery	0	1	2
Malaria	2	0	18
Influenza	743	3025	1313
Smallpox	0	0	0
Measles	949	2213	203
Poliomyelitis	6	4	5
Encephalitis	1	0	1
Chickenpox	275	328	186
Typhus fever	3	0	20
Mumps	243	400	191
Cancer	343	305	233
Pellagra	0	3	1
Pneumonia	224	364	430
Syphilis	220	221	1092
Chancroid	6	5	12
Gonorrhea	262	250	475
Rabies—Human cases	0	0	0
Positive animal heads	35	37	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

also land in mud, where it cannot survive. What it wants is any hard clean surface, such as the piling of piers, brushwood, clean rocks, pieces of sand or gravel, or the shells of older oysters. Oyster farmers usually provide thousands of bushels of clean oyster shells left over from oysters which fell for this same trick. Once located, the oyster devotes itself almost exclusively to trying to stay alive. Simply to sustain a life reduced to the barest essentials is very hard work. The oyster eats by straining minute vegetable life out of water; it is a pump, and may have to pump as much as forty quarts of water per hour. This is a life of drudgery, though one fact lightens the pathos a little. The oyster has nothing else on earth to do. Fortunately oysters are not given to worry. Lacking a central nervous system has advantages. The oyster feels no pain and never realizes the injustice of it all.

Oysters feed most efficiently when the surrounding water is relatively warm. Their rate of growth varies greatly, depending mainly upon the temperature, food content of the water, and season of the year. Generally, the growth is more rapid in warmer waters. Oysters of southern waters usually reach marketable size in two years, whereas, in cooler climates, the time required for the oyster to reach marketable size may be four or five years. As winter approaches, the oyster slows down and eventually hibernates. To tell a dozing oyster from one wide awake and full of the joy of living may sound difficult. There is however, one clear-cut distinction. A hibernating oyster relaxes so completely that it doesn't even grow. The meat of the oyster is extensively used for human food. It contains large quantities of nutritive substances necessary for a balanced diet. It is very high in copper and iron. It also contains iodine, and relatively high quantities of phosphorus and calcium, as well as most of the essential vitamins.

Because of the nature in which the oyster obtains its food, waters from which they are taken to be sold as food are under constant supervision of health authorities. Furthermore the places where the oysters are opened, and all the equipment that comes in contact with the creatures are required by regulation to be maintained at a high degree of cleanliness.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR DECEMBER 1951, AND COMPARATIVE RATES

Live Births, Stillbirths and Deaths by Cause	Number Registered During December 1951			Rate* (Annual Basis)		
	Total	White	Colored	1951	1950	1949
Total live births.....	7143	**	**	27.1	27.1	27.8
Total stillbirths.....	173	**	**	23.6	29.5	23.0
Deaths, stillbirths excluded.....	2408	1371	1037	9.1	9.9	9.6
Infant deaths: under one year.....	307	145	162	43.0	40.2	38.5
under one month.....	200	104	96	28.0	24.3	25.6
Causes of Death						
Tuberculosis, 001-019.....	57	26	31	21.6	26.5	21.3
Syphilis, 020-029.....	9	2	7	3.4	6.1	7.7
Dysentery, 045-048.....	2	1	1	0.8	0.4	0.8
Diphtheria, 055.....	5	1	4	1.9		0.8
Whooping cough, 056.....	4	2	2	1.5	0.8	0.8
Meningococcal infec- tions, 057.....	2	2		0.8	1.2	
Poliomyelitis, 080, 081.....	1		1	0.4	0.8	0.8
Encephalitis, 082, 083.....					0.4	
Measles, 085.....	2	1	1	0.8		
Malaria, 110-117.....					0.4	0.8
Malignant neoplasms, 140-200, 202, 203†.....	242	172	70	91.8	82.1	84.6
Diabetes mellitus, 260.....	38	22	16	14.4	10.7	12.8
Pellagra, 281.....	3	1	2	1.1	0.4	
Vascular lesions of central nervous sys- tem, 330-334.....	309	149	160	117.2	122.8	115.6
Other diseases of nerv- ous system, 300-318, 340-398.....	31	15	16	11.8	18.0	17.4
Rheumatic fever, * 400-402.....					2.7	2.3
Diseases of the heart, 410-443.....	706	448	258	267.9	289.6	290.7
Diseases of the arte- ries, 450-456.....	42	31	11	15.9	11.9	13.1
Other diseases of the circulatory system, 444-447, 460-468.....	31	16	15	11.8	10.0	13.1
Influenza, 480-483.....	20	10	10	7.6	8.4	6.6
Pneumonia, 490-493.....	122	64	58	46.3	43.4	43.7
Bronchitis, 500-502.....	4	3	1	1.5	2.7	1.9
Appendicitis, 500-553.....	7	5	2	2.7	1.5	1.9
Intestinal obstruction and hernia, 560, 561, 570.....	16	12	4	6.1	5.4	8.1
Gastro-enteritis and colitis, under 2, 571.0, 764.....	11	7	4	4.2	3.8	4.2
Cirrhosis of liver, 581.....	22	10	12	8.3	3.4	3.9
Diseases of pregnancy and childbirth, 640-689.....	8	3	5	10.9	20.6	12.2
Sepsis of pregnancy and childbirth, 640, 641, 645.1, 651, 681, 682, 684.....	1	1		1.4	4.1	4.1
Congenital malforma- tions, 750-759.....	22	15	7	3.1	4.5	3.2
Accidental deaths, total, 800-962.....	154	88	66	58.4	83.2	70.4
Motor vehicle acci- dents, 810-835, 960.....	52	37	15	19.7	36.1	30.5
All other defined causes.....	405	221	184	153.7	177.2	165.0
Ill-defined and un- known causes, 780, 793, 795.....	133	44	89	50.5	56.8	62.2

*Birth and death rates per 1,000 population; stillbirths per 1,000 total births (stillbirths included); infant deaths per 1,000 live births; specific causes per 100,000 population; deaths from puerperal causes per 10,000 total births. All rates are based upon the December report of the years specified.

**Not comparable or not available.

†Excluding Hodgkins' disease (201); leukemia, aleukemia (204) and mycosis fungoides (205).

BOOK ABSTRACTS AND REVIEWS

The Life of Dr. Peter Fayssoux. By Chalmers D. Davidson. Cloth. Price, \$2.75. Published by the South Carolina Medical Association, Columbia, 1950.

This biography of Dr. Peter Fayssoux was written under a Carnegie Foundation grant. Dr. Fayssoux was a pioneer physician during the Revolutionary War Era and, as such, became a leading figure in the development of the Charleston area. Dr. Fayssoux was Surgeon General and Chief Physician of the Southern Hospital during the Revolutionary War, and his activities in the Charleston area serve as a backdrop for this biographical sketch which, in turn, provides intimate glimpses into the life and times of early pioneers. This book should appeal to lovers of history, both medical and lay.

J. M. Barnes, M. D.

Progress Volume—Hyman's Integrated Practice of Medicine. (An appraisal of latest developments in therapeutics prepared by Harold Thomas Hyman, M. D., to accompany his 4-volume Integrated Practice of Medicine, and containing cross references to the original 4 volumes and an index system to all 5 volumes.) Cloth. Price, \$10.00. Pp. 734. Philadelphia and London: W. B. Saunders Company, 1950.

The impact of the original edition of Hyman's Integrated Practice of Medicine is still being felt. Rather than attempt a revision Dr. Hyman hit upon the plan of this Progress Volume. It is the intent of the book to cover more recent therapeutic measures which have been introduced in the period between "press time" for the original set and the present time.

This volume is practically a must for those who own the original set of Hyman and will prove of value even to those who do not own the original Hyman.

J. M. Barnes, M. D.

Psychosomatic Gynecology. Including Problems of Obstetrical Care. By William S. Kroger, M. D., Assistant Clinical Professor of Obstetrics and Gynecology, Chicago Medical School; Attending Obstetrician and Gynecologist, Edgewater Hospital, Chicago; and S. Charles Freed, M. D., Adjunct in Medicine, Mount Zion Hospital, San Francisco, California. Cloth. Price, \$8.00. Pp. 503. Philadelphia: W. B. Saunders Co., 1951.

This interesting book on psychosomatics is unique in many ways. It is written by two clinicians, neither of whom is a psychiatrist or has received extensive formal psychiatric training. It is a result of approximately 15 years of their "ex-

periences and the conviction of a great need for an understanding of psychodynamics so as to give proper service to . . . patients." The authors have succeeded in their efforts to orient the gynecologist in the underlying psychodynamics of disease.

The first part of the book is devoted to a study of the psychosomatic aspects of the fetus and infant, including the significance of early psychosexual development as relates to gynecology. The next part of the book is a study of the psychosomatic aspects of the mother during pregnancy. This includes a chapter written by Grantly Dick Read which follows the same theme as in Read's other writings on the subject. Part 3 is Psychosomatic Aspects of Neuroendocrinology. Part 4 is devoted to the common psychosomatic problems of gynecology, such as sterility, frigidity and dyspareunia. Part 5 is devoted to methods of diagnosis and treatment.

This book is well written and the practical clinical point of view is ever present. As in any writing on psychiatry, many of the ideas seem overly theoretical and speculative. In general, though, it is easy to read and easy to understand. This book can be very useful in bridging the gap between psychiatry and gynecology. It will give the psychiatrist and the gynecologist a better understanding of each other's problems and attitudes. It is strongly recommended as a helpful, informative, and thought-provoking book for all physicians who wish to better understand the psychodynamics of pregnancy and gynecology.

Joe W. Perry, M. D.

The Battle for Mental Health. By James Clark Maloney, M. D. Cloth. Price, \$3.50. Pp. 105. New York: Philosophical Library, Inc., 1952.

The author is one of the founders and an ardent proponent of the Cornelian Corner, a movement originating in Detroit and identified unfortunately by its most controversial concept which advocates keeping the new-born child in the same room with and in the personal care of the mother as a standard hospital procedure. Resistances to this concept are perhaps more practical than theoretical and stem generally from the mothers, themselves, pediatricians, obstetricians and hospital administrators who see in such a change no end of grief and inconvenience. Other planks in the Cornelian platform—the dissemination of information on basic needs of the growing child, the merits of demand feeding, the permissive parent-child relationship, the "relaxed" mother, occupy a significant portion of the best in this book. None will deny the soundness of its basic premise—that infant and childhood influences are responsible for much or most of what is considered men-

tal ill health; nor is there much doubt that resistances to Cornelian concepts do exist. At times the author's indignation and impatience with these resistances reach a level of shrill churlishness more akin to the soap box than to the lecture platform. Had the author been content to persuade rather than exhort his reader, his cause would not have suffered.

Departing from Cornelian matters, the remainder of the book consists of two poorly integrated chapters of dog-eared statistics and the author's rather gloomy picture of the "average" American in whose culture the attitude "of violence and authoritarianism is stressed. Military leaders have become saints in our particular and specialized brand of fascistic religion. Edison and Fulton are eulogized but Washington, Grant, and Pershing are worshipped as Gods." Have a care, Dr. Maloney! It is from just such irresponsible stuff that editorials in *Pravda* are fashioned. There is too much of the angry prophet crying out a note of doom. Sociology, anthropology, and history provide little to support such libel.

Philip S. Bazar, M. D.

Diagnostic Bacteriology. By Isabelle Gilbert Schaub, A. B., Technical Director, Clinical Bacteriology Laboratories, The Johns Hopkins Hospital, Baltimore, Maryland; and M. Kathleen Foley, M. A., Instructor in Bacteriology, Department of Biological Sciences, College of Notre Dame of Maryland. Fourth edition. Cloth. Price, \$4.50. Pp. 356, illustrated. St. Louis: The C. V. Mosby Company, 1952.

The new edition of Schaub and Foley is an excellent bacteriologic laboratory book. Included in this new edition are sections on the gram stain, selection and sterilization of media, and the preparation and use of agar plates. Complete descriptions are given on procedures of cultivation of bacteria from clinical and autopsy material along with practical methods of identification of gram positive and negative organisms. The section on antibiotic sensitivity tests is most thorough. Two chapters are devoted to serologic and agglutination tests. Media, stains, reagents and techniques are described adequately.

For a small book, it contains the most detailed discussion on the identification of paracolon bacilli that we have read. Certainly in enteric work especially, the paracolon bacilli can be a very troublesome contaminant. In our opinion, though, on page 166 under biochemical characteristics of paracolon bacilli, the listing of *paracolonobacterium intermedium* as negative for H₂S should be listed as positive. On page 269, in the description of preparation of antigens, the authors advise centrifuging antigen only ten minutes and to discard the supernatant fluid. We feel that such a short centrifuging time would allow much of the antigen to be lost. Also, in the preparation of *Brucella* antigen, the authors recommend strain No. 456 of *Brucella abortus*. Dr. Huddleson feels that this strain is not entirely satisfactory for the production of antigen and recommends strain 2308 of *Brucella abortus*. Al-

so, we feel that the best method for tube agglutination test is still controversial and that their table as given on page 275 should be listed as one of the acceptable methods. The inclusion of the red cell agglutination test for tuberculosis was unfortunate in view of recent laboratory work showing it to be of little use in diagnosis, but it was perhaps reasonable to include this test at the time of the book's publication.

All of the above criticisms are certainly minor in nature. We are frankly impressed with the amount of material covered in this small volume. The reviewer feels it is a great step forward in the attempt to separate bacteriology from other laboratory procedures. Too often in many so-called general laboratory manuals, the bacteriologic methods often do not incorporate recent ideas and in many cases give totally misleading information. To us, then, the use of the book is a must for all people engaged in bacteriologic work, in particular the hospitals and public health laboratories, if only used in identifying paracolon bacilli.

Thomas S. Hosty, Ph. D.

Sex and the Law. By Morris Ploscowe. Cloth. Price, \$3.95. Pp. 255. New York: Prentice-Hall, Inc., 1952.

There survive in many local, state and, possibly even, federal legal codes, laws so outlandishly archaic, so crassly stupid or absurdly whimsical as to warrant the description of "howlers." With perhaps more charity than clarity, we tend to dismiss these spoors of our codified past as ludicrous oversights in the ponderous machinery of statecraft or as additional proof of the frothy ferment of some legislative minds (100 proof, that is). While we may be amused, or embarrassed by such legal trivialities, we can't fail to view with more dismay other laws, no less outmoded, no less ludicrous, no less contradictory, yet so weighted with social significance that to dismiss them would invite the accusation of irresponsibility. Judge Ploscowe has undertaken the scholarly task of examining those laws which relate to sex. His approach is understandably a judicial one, yet not exclusively so. Throughout is revealed his awareness of the need to consult and incorporate the opinions of other of the social disciplines, and yet he fails to avoid the pitfall of summarily rejecting those, which, to his legal mind, are far-fetched or otherwise unacceptable.

In an incisive introduction, Judge Roscoe Pound defines the mass means of controlling human behavior, pointing out the limited role that law, even sound law, may play in governing sexual activity. He sees a need not only for the revision and purging of our codes of those laws which Judge Ploscowe examines and condemns but also for an improved machinery preliminary to the enactment of new laws.

In the body of the book, the author examines the laws pertaining to marriage, annulment, divorce, illegitimacy, psychopathic sex offences and prostitution. He retraces the developmental his-

tory of such laws, underlining the inconsistencies, questioning the aims, condemning the injustices that they perpetrate on the public. He wanders from one state into another to compare and dips liberally from the bowl of his own wide, legal experience. He criticizes, and denounces, sparing not even the august Supreme Court of the United States.

This is an excellent book. It is a well documented and sincere effort by a man of considerable social insight and discrimination. It should find its way into the libraries of every state legislative house and should be required reading for each legislator. It is worthy of the attention of state bar associations whose efforts in the direction indicated by the author may be spurred to greater militancy by this thorough evaluation of the problem.

Philip S. Bazar, M. D.

Why National Board Examinations—The National Board of Medical Examiners has a very important relationship to medical students and to the whole field of medical education in the United States and Canada. Its certificate is generally accepted as an adequate qualification for medical licensure by the state boards in this country.

At the present time, approximately 2,500 medical students and physicians apply annually for the Board's examinations. The vast majority are students in their second year, a few are members of the third or fourth year classes, and a few already have their medical degree. One of the rather obvious advantages of the National Board examinations is the fact that they may be taken during the course of training when the student is well prepared—as well prepared as he ever will be—to pass the examinations covering the preclinical and clinical subjects. The examinations are divided in three parts: Part I, including anatomy, physiology, biochemistry, microbiology, pathology, and pharmacology, is customarily taken at the end of the second medical school year; Part II, including medicine, surgery, obstetrics, pediatrics, public health and preventive medicine, is scheduled at the end of the fourth year; and Part III, a final oral, bedside test, is given at the end of a year of internship. The total number of candidates who go through one or another of these examinations during the course of a year is now nearly 8,000.

An increasing number of medical schools find it desirable to require the National Board's examinations for all their students, thus providing an additional, completely impartial, objective and well established evaluation of the student's knowledge. There are 15 such schools from New England to California. These schools not only provide an advantage for their students in anticipation of licensure, but also, by virtue of the manner in which the results are now being analyzed, the school itself has a useful yardstick by which it may compare its teaching with that of other schools.

A matter of immediate interest is the use of the objective type of multiple-choice questions now replacing the essay questions in certain of

the examinations. This change should be of no undue concern to medical students. The new form has already been tried out during the past year, and, insofar as opinions have been expressed, the multiple-choice examinations are regarded as a fairer test in that they cover a wider scope of subject matter and are completely objective in grading the results.

There has never been any thought on the part of the National Board to set itself up as a national licensing body. It is the proper function of the individual states to determine who shall practice within their borders and to maintain high standards of medical practice in accordance with their own rules and regulations. The state licensing boards, however, do not receive applications until after the completion of the formal training when the physician seeks a license to practice his profession. At this point the state board gives an examination which, although it may extend over two or three days, is inevitably less extensive and searching than the National Board examinations which take three days for Part I, two days for Part II, and one or two days for Part III. In recognition of the thoroughness and widely accepted standards of the National Board's examinations, its certificate is accepted as an adequate qualification for registration by the medical licensing authorities of all states except Florida, Texas and Wisconsin. In a few other states, additional examinations, mostly oral, are required to meet provisions in the state laws. The general acceptance of the National Board's certificate is its greatest advantage since, once acquired, it obviates the necessity of examinations when in this day of change and uncertainty, a physician may move in later life from one state to another.—*Editorial, S. A. M. A. Journal, April '52.*

Cancer of the Stomach—The resection of organs close to the stomach when invaded by the malignant process in treating gastric cancer is mandatory if we are striving to achieve more than simple palliation for our efforts. We do not hesitate to remove a portion of the liver when it is invaded by contiguity from carcinoma of the stomach. Frequently a large percentage of tissue in an apparently inoperable mass is inflammatory. It is generally conceded that the greater omentum should be removed in all malignant lesions of the stomach. We have resected a portion of the pancreas on occasions and have been favorably surprised at the low incidence of pancreatic fistulae following this procedure. If the malignant lesion invades the head of the pancreas, a more serious problem is encountered. One should weigh the operative mortality and the patient's future discomfort against the likelihood of a cure before removing this important segment of the organ. The spleen is seldom invaded by metastatic carcinoma, but its removal facilitates exposure of the gland bearing area around the stomach. Its removal when one is operating for gastric cancer should be routine.—*Sawyer and McGlone, Arizona Med., April 1952.*

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THE MANAGEMENT OF VIRAL HEPATITIS

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The problem of management of viral hepatitis is one to concern us all. We are becoming increasingly aware of the greater incidence of this infection, whether it be due to virus IH or virus SH. Virus IH refers to the infectious agent inducing infectious hepatitis as contrasted to the virus causing homologous serum jaundice. With the widespread use of whole blood and plasma, particularly plasma, there is the danger of the transmission of the SH virus.

While this is an illness generally characterized by a non-malignant course, there is a significant incidence of chronic and fatal complications, in addition to the usual morbidity that justifies optimal management at all times. I believe this management can be supplied wisely by his private physician without undue expense to the patient.

We are not concerned today with the diagnosis of this entity but in its management. However, it is always desirable to obtain a baseline of clinical and laboratory evidence on such a patient. I do not feel that hospitalization is at all mandatory, but I do believe that a few days of initial hospitalization are well justified. Laboratory aids certainly should be utilized in the control of therapy and the recognition of imminent hepatic failure; and therefore initial studies are always indicated. For the young individual, which will be by far the majority of the virus IH group, a minimum of laboratory procedures usually suffices. Initially, these studies should include a urine uro-

bilinogen, an icterus index, a quantitative Van den Bergh, a cephalin flocculation, and/or a thymol turbidity test. One may want to include a heterophile agglutination for differential diagnosis. If the patient under observation is past the age of 45, gives a history of alcoholism, or a history suggestive of previous liver disease, then one should initially do a battery of liver function studies, and the most opportune time to do these battery tests is when the patient first comes under your care. This series of tests will serve to aid in the differential diagnosis, as well as to give an initial picture for further comparison with subsequent studies. This battery should include a urine urobilinogen, an icterus index, a quantitative Van den Bergh, a cephalin flocculation and/or thymol turbidity, a total protein with an albumin/globulin ratio, an alkaline phosphatase, a cholesterol and cholesterol esters, and a prothrombin time. Other tests may be done but I believe these procedures will be sufficient. I should like to mention two other tests as not being of value at this time. The first is the brom-sulfalein, which is very useful later, but not while a patient is clinically jaundiced. The second is the sedimentation rate, which is of no value initially or in the follow-up.

One might comment briefly about some of these tests. The normal icterus index is 4 to 6 units, and when 12 units and below, jaundice will not be detectable clinically. The quantitative Van den Bergh is a more useful test for close management since the icterus index depends upon a colorimetric comparison which is more prone to error than that of the Van den Bergh. The cepha-

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lin flocculation and thymol turbidity tests best measure activity of the infectious process; however, they are not identical in principle and results.^{1, 2} The thymol turbidity test is the last of the tests to become abnormal and the last to return to normal. Work has been done to suggest that this test also represents reparative efforts of the liver cells.³ The BSP procedure is the most effective measure in determining the degree of damage in this case.

The use of laboratory methods in the late management of these patients will be discussed again later in this paper.

One other item of a general nature which should be mentioned is that of weighing the patient when first seen—if the patient is not too sick—and subsequently regular weighings approximately two times weekly.

We are next confronted with the problem of the specific items of therapy in this patient's care. The cardinal principles of treatment in viral hepatitis are rest, diet, and the avoidance of additional liver trauma.^{1, 4, 5} It is on these principles that the well-being of the patient depends. When the patient is first seen, and during the acute phase of his illness, he should be in bed at all times. When the acute phase, as manifested by nausea, vomiting, extreme malaise, and other symptoms, has passed, then one is justified in allowing certain bathroom privileges if the bathroom is within the distance of a few feet. I think one should plan basically to disallow the patient any other ambulation until a minimum of four weeks has passed, regardless of what his clinical improvement is; and he should be told when first seen that he is to expect to remain in bed for a minimum of four weeks and that the earliest he can expect to return to work is seven or

eight weeks. If a patient knows that this is one of the fundamentals of his treatment, then, as the days go by, he knows the length of time to anticipate (in some degree) and the purpose of this inactivity, and therefore he is a much more contented patient.

The diet carries no name or magic formula. These patients initially usually require liquid or soft foods, and intravenous fluids may be indicated. These should consist of hypertonic solutions. One may need protein supplements intravenously if the nausea and vomiting persist for a length of time, but this would be the rarity rather than the rule.

The diet should be a high caloric, high protein, high carbohydrate, and moderate fat.^{5, 6} To break this down further, it should contain 3500 to 5000 calories, 120 to 175 grams of protein, 350 to 500 grams of carbohydrate and 80 to 110 grams of fat. You can see that we are not quibbling too much about the fat. Enough fat should be allowed to make the diet palatable, and to provide the calories. If you have ever tried to eat this number of calories, you certainly know that if served as three meals they are extra large servings of food. I think it wise to let the patient determine in some measure the number of feedings that are to be served, such as the three regular meals plus in between meal and bedtime feedings. The between meal feedings of milk shakes or egg-nogs enriched with protein supplements or skimmed milk powders are often an easy and convenient method. The use of hard rock candy at the bedside will add more calories and some variety to this diet. Restriction of sodium to 2.5 grams or less is warranted if edema is present or develops.

The specific supplements to rest and diet consist of a number of things, but chiefly of vitamins. The patient should receive vitamin A, 25,000 to 50,000 units if aqueous or 50,000 to 100,000 units in oil, daily. Large doses of the synthetic B group in unbalanced doses may produce liver injury and therefore should be used only in average amounts. Vitamin C should be given in a dose of 500 to 1000 mgm. daily. Whether vitamin D and E have any place in the

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2. Popper, H., and Schaffner, F.: Hepatic Tests, *Advances Int. Med.* 4: 357-443, 1950.

3. Lawler, A. L., and Hirst, R. R.: Hanger Cephalin Cholesterol Flocculation Test and Mac-lagan Thymol, U. S. Armed Forces M. J. 1: 902-912 (Aug.) 1950.

4. Capps, R. B., and Barker, M. H.: Management of Infectious Hepatitis, *Ann. Int. Med.* 26: 405-416 (March) 1947.

5. Patek, A. J., Jr.: Hepatitis and Cirrhosis of Liver, *Advances Int. Med.* 4: 329-356, 1950.

treatment is not well defined and require no specific attention. Vitamin K in adequate doses should certainly be used intramuscularly or orally if there is any indication of prothrombin deficiency.⁶

Brewers' yeast should be used to supply crude products in the B complex group. This should be given as a total of 25 to 30 grams daily. One tablespoonful of the powder represents 10 grams of Brewers' yeast; the tablets are usually only 0.3 grams or 5 grains. These individuals will generally prefer to take brewers' yeast powder 3 times daily in tomato juice, milk, or some fruit juice. Again, I think the patient should be told why this is being used, because it is not tasty. I see no reason to push it when the patient is nauseated or vomiting.

Other supplements may be added. For a time, one should probably use crude liver extract intramuscularly, 2 cc. daily or every other day and vitamin B 12, 30 micrograms, intramuscularly, on the same schedule. Intraheptol, a liver extract, is both expensive and without sufficient convincing evidence to warrant its use. Calcium gluconate, 10 cc. to 20 cc. of a 10% solution, may be used intravenously in those with severe hepatitis associated with toxemia.

In the presence of persistent malaise, anorexia, and weight loss, one may use testosterone, 10 mgm. daily orally for 10 to 14 days, often with good success. With a poor response to the treatment and the reversal of the albumin/globulin ratio, and a decrease in the total serum protein, one should use fresh whole blood, or intravenous salt-poor human albumin. More albumin is becoming available because of the blood donor program. The lipotropic agents, as choline, inositol, and methionine, have no place in the management of these patients. For sedation, chloral hydrate, paraldehyde, and slow acting barbiturates are safer. Pruritis will seldom be a problem, but, if so, antihistaminics and I.V. procaine in an 0.1 to 0.2 per cent solution may be used.

What of the role of the antibiotics in this condition? Aureomycin is the drug that has found a place at present in the treatment of liver disease.^{7, 8} However, its place

is not in the type of problem we are discussing today, but in the treatment of hepatic insufficiency. Very good work of limited nature has been done in the treatment of certain chronic problems of liver disease and in liver failure, and these studies have shown aureomycin to be of benefit. The largest control study (37 cases) of acute viral hepatitis failed to reveal any significant improvement in the aureomycin treated group versus the control group.⁷ One recent study has also raised the question of actual hepatic injury secondary to aureomycin in large doses. If the occasion should arise for the use of aureomycin, it is recommended that it not be given intravenously in large doses. It is suggested that, when aureomycin is administered orally in addition, no more than 1 gram of aureomycin should be given by the intravenous route. When adjuvant oral therapy is not employed 2 grams a day intravenously would be the maximum dose. There is no evidence that the oral administration of aureomycin in the dosage range commonly employed will cause any clinical evidence of injury to the liver.^{9, 10} One should remember that the urine urobilinogen will usually become negative within three days if that test is being used in following the patient's progress.

Cortisone and ACTH have also been studied on a limited basis and the reports to date express the opinion that no particular paramount benefit has been noted.¹¹ The use of the hormonal drugs did stimulate a feeling of well-being with return of the appetite in some of the patients, but the laboratory studies did not reflect any improve-

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10. Lepper, M. H., and others: Effect of Large Doses of Aureomycin, Terramycin, and Chloramphenicol on Livers of Mice and Dogs, *A. M. A. Arch. Int. Med.* 88: 284-295 (Sept.) 1951.

11. Colbert, J. W., Jr.; Holland, J. F.; Heisler, I., and Knowlton, M.: The Use of ACTH in Acute Viral Hepatitis. Proceedings of the Second Clinical ACTH Conference, 1950. Philadelphia, Blakiston, 1951, V. 1, pp. 371-385.

7. Schaffer, J. M.; Farquhar, J. D.; Stokes, J., Jr., and Sborov, V. M.: Studies on Use of Aureomycin in Hepatic Disease; Aureomycin Therapy

ment. The drugs—cortisone and ACTH—at present have no place in the management of these individuals and their use should still be by groups doing special studies with them, in so far as this problem is concerned.

How are we to follow this patient and to judge when he can become ambulatory and when can he return to work? First is clinical improvement as to appetite, sense of well-being, loss of abdominal symptoms, and of a gain in weight. Remember that earlier we mentioned weighing the patient frequently. It is here that certain laboratory tests are of great value. The patient should have a urine urobilinogen and a quantitative Van den Bergh every 7 to 10 days until they are normal. If there is any suspicion of a relapse, the use of a urine urobilinogen rising titer is the most effective and least expensive method to detect this change. If the patient clinically is doing well and the urine urobilinogen and the Van den Bergh are normal, then a bromsulfathalein test should be performed. This consists of the intravenous injection of 5 mgm. BSP per kilo of body weight and the taking of a 30 or 45 minute blood sample. This should be performed on fasting individuals for more accurate results, although, except in borderline cases, non-fasting readings will be sufficiently accurate. There is no need for a 30 and a 45 minute sample; the 45 minute sample is now the one most generally used. A reading in excess of 5 per cent is above normal for the 45 minute sample, and in excess of 10 per cent is above normal for the 30 minute sample.

If the BSP is normal in addition to the urine urobilinogen and Van den Bergh, plus no clinical evidence of hepatic disease, then the patient may be ambulated. I have already stated above that I believe this process of ambulation should not begin until the fifth week regardless of other findings. The patient is then ambulated gradually with attention to the effect of this mild exercise on the patient clinically. The liver function studies performed prior to ambulation are repeated after 7 to 10 days and, if still normal, then the patient is allowed full and active ambulation. Again, after 7 to 10 days these tests are repeated and if normal and there are no abnormal clinical findings then the patient should be ready for return to his usual routine. The patient should

still be seen at regular intervals for several months thereafter. A word in regard to the cephalin flocculation and thymol tests is that they may still be elevated at this time and should not serve to hinder ambulation if other requirements stated above have been fulfilled.

The diet should be continued throughout this period of observation and ambulation, and on return to work the patient should eat wisely. Alcohol is the one thing the patient is to be definitely warned against. By no means should he use alcohol in any form for six months, and probably should use none at all, or very little, the remainder of his life. Other precautions to be taken during and immediately after the active phase of the illness are the avoidance of any hepatotoxic drugs, and the avoidance, if possible, of anesthesia or a surgical procedure, and secondary infections.

This management is basic for any hepatic disease, but will have some variations for other specific problems.

Emphasis should be placed though on the initial study, in the gaining of full cooperation of the patient through some explanation of the basic treatment of bed rest and diet, and through the routine use of a standard program for evaluation of ambulation.

Parotid Tumors—The majority of parotid tumors are classified as mixed tumors of the salivary glands. The literature contains much theorizing as to their etiology. These tumors contain epithelial cells which often assume a glandular architecture, surrounded by myxomatous material which stains like cartilage. Scattered through this matrix are connective tissue and occasionally lymphoid tissue and bone. These tumors do not imitate the normal structures of salivary glands and may be found at distant sites, such as the tongue, nasopharynx, hard palate and nasal accessory sinuses. It is generally accepted that these tumors are derived from rests of embryonal ectoderm owing to some disturbance in embryonic development.

Tumors of this type usually occur between the second and fourth decades. The onset is as a rule marked by a painless mass in front or behind the mandible. The flow of saliva is normal, and it is usually clear. There is a gradual increase in the size of the tumor, and its presence may be unknown to the patient until a period of rapid growth occurs. A firm well defined mass is palpable in the superficial portion of the gland. It is less well defined in the deep portion. Benign mixed tumors do not cause a facial paralysis.—*Taylor, J. Florida M. A., May '52.*

CONGENITAL ATRESIA OF THE NASAL CHOANAE

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By definition, choanal atresia is a condition characterized by partial or complete closure of either, or both, of the dorsal apertures of the nasal cavity. The clinical anomaly commonly described in the literature is always a complete closure, and a more accurate description would be congenital occlusion rather than congenital atresia. Boyd states that "It is not atresia in the true sense of the word in that it probably occurs because of the failure of normally occurring embryonic structures to disappear."

The anomaly was first recognized by Otto at autopsy in 1829. Emmert is credited with having first recognized the condition in the living and with having first successfully attacked the obstructing membrane surgically in 1853. It is generally considered to be a rare anomaly. At the time his paper was published in 1945, Boyd, in a review of the available literature, accounted for approximately 230 cases. Within the past decade reports have been appearing more frequently and one might consider it an infrequent rather than a rare anomaly.

Colver, in his paper published in 1937, gives a detailed description of the developmental anatomy of the choanae. He states that "It would appear from the developmental history and these various relationships that at least three structures might participate in the closure of the posterior choanae: first, the nasobuccal membrane; second, the buccopharyngeal membrane, and third, some part of the bony structure forming the funnel-like passage which constitutes the posterior choanae." Boyd states that "if congenital choanal atresia is due in all cases to a persisting developmental membrane, the resulting bone should be membranous and should not contain cartilage. It has been shown, however, by histologic examination of bony fragments removed at operation and postmortem that islands of cartilage do occur. This presents the third possibility, a medial overgrowth of the ver-

tical and horizontal palatal processes. These bones are layed down in cartilage. Therefore, it seems plausible that cartilage appearing in the bone of a congenital choanal atretic structure might well originate from this source."

In spite of the fact that the cases reported in the literature are predominantly unilateral, there is some disagreement regarding the relative incidence of unilateral and bilateral anomalies. Evidence seems to indicate that occurrence of a bilateral occlusion in the adult is an extremely rare condition. Colver states: "On the other hand, Richardson, in 1914, declared that the bilateral cases predominated in the proportion of three to one. Those who subscribe to this view may assume that the majority of cases of asphyxia neonatorum and some other causes of death within the first 72 hours after birth are probably due to this malformation. Evidence is lacking and there is no sound foundation for the assumption." There is the possibility that closure of the choanae may frequently be the cause of asphyxia neonatorum. We, as otolaryngologists, are obligated to the obstetricians and pediatricians to keep them informed of this possibility and to request that they determine the patency of the nose in every case of asphyxia in the newborn.

McGovern has called attention to the hereditary nature of choanal occlusion. He relates a few instances in which more than one member of a family has been found to have atretic choanae.

McGovern has made a study of the associated developmental anomalies, the nasal physiology, and the resultant pathology in adjacent organs. In reporting on five cases of total unilateral bony occlusion and one case of bilateral occlusion he states: "A review of the cases of choanal atresia reported more in detail in the literature indicates that the anatomic development of the sinuses, in either bilateral or unilateral atresia, is unimpaired, and that sinusitis is an occasional rather than a routine finding." In his investigation he found normal ciliary activity in all cases and no appreciable hear-

ing involvement. Boyd, in reporting a case of bilateral atresia occurring in a man twenty years of age, states: "It is interesting to note that although this patient never had a nasal passage his general appearance did not bare any resemblance to the 'adenoid facies' so often seen in children who have obstruction in the nasopharynx due to adenoids. His upper teeth were irregular but, contrary to general opinion, his bite was normal and there was no protrusion of the central incisors. The palate was high and arched but symmetric and well developed. There was no asymmetry in the face. The sinuses were normally developed, and there was no evidence of previous sinusitis nor was there sinusitis at the time of operation. There was no history of ear trouble, past or present, and a hearing test showed the patient to have exceptionally good hearing."

The diagnosis of choanal atresia is not difficult to make. The possibility of occlusion must be considered in every case of nasal obstruction. Cases are on record in which several surgical procedures had been executed before the true nature of the obstruction was realized, the most frequent procedure being that of adenoidectomy. Inability to pass a probe through the nose into the nasopharynx should arouse the suspicion of an atretic membrane. It is a routine part of my office procedure to pass the electric nasopharyngoscope on every new patient who is old enough to cooperate. In the case that I am reporting it was failure to pass the nasopharyngoscope that raised the question of choanal obstruction. I have found the Haslinger palate retractor and the laryngeal mirror to be invaluable aids. X-rays made following the instillation of lipiodol into the nasal chambers are frequently made for completeness of the investigation but are not necessary for establishing the diagnosis.

The correction of the anomaly is entirely surgical. The most common failure encountered in surgical correction is secondary closure of the newly-formed choanae by cicatricial stenosis. Obturators formed of metal, rubber and acrylic are frequently used to maintain patency of the choanae, and some surgeons have devised packs of various kinds for the same purpose. There is the possibility that these implements may be a contributing factor in producing sec-

ondary closure because of the foreign-body reaction to them. Many different surgical techniques have been devised and it is not my intention to present a detailed review of all these techniques. The routes of attack to the occluding membrane may be classified into a group of four categories as follows: first, through the nose; second, through the nasopharynx; third, through the antrum, and fourth, through the palate. The transpalatine approach described by Owens seemed most likely to meet the requirements of the case that I am reporting. Owens' technique will be described later in this paper.

CASE REPORT

K. B., a 26-year old white female, presented herself on February 20, 1952 with the complaint of having never been able to breathe through the nose. Her parents stated that the first three weeks of her life were difficult in that her mouth had to be held open constantly in order that she might breathe. Feeding the infant was particularly difficult. Soon after birth the parents also noted a marked deformity of the left eye. No other abnormalities were noted, and after the infant acquired the habit of mouth breathing her growth and development continued without appreciable impairment. There was no history of hearing impairment nor other ear trouble.

The patient is an alert, well-developed young woman of about the stated age. She holds the mouth open constantly and speaks with the voice characteristic of nasal obstruction. The face has the characteristics of "adenoid facies." The upper lip is relatively shortened and there is prominence of the upper teeth. The forehead is prominent, suggesting unusually large frontal sinuses. There is marked congenital deformity of the left eye and a congenital coloboma of the lower half of the right eye. Perception in the left eye is absent, and sight in the right eye is poor. The chest is symmetric and there is no evidence of pathology of the heart nor the lungs. The abdomen is patulous but is not otherwise noteworthy. Skeletal and muscular development are normal. The blood picture is normal except for eosinophilia of 13% and slight leukocytosis of 10,300. The bleeding and clotting times are normal and the urine is negative. The stools contain ova of *Necator americanus*.

The ears are normal except for slight bulging of both tympanic membranes. No hearing impairment to the normal conversational voice is evident. The nose is very narrow in the transverse diameter and the left naris is slit-like. The dilator muscles of the nares are under-developed but the function of these muscles is still present. The nasal cavities are partially filled with glairy mucus. There is relative hypertrophy of all the nasal turbinates and slight deflection of the septum to the left. The nasal mucosa has a pale purple hue. There is extreme arching of the palate and relative narrowing of the maxillary arch in the transverse diameter. A prominent bony ridge extends the entire length of the midline of the hard palate. The teeth are malpositioned and there is a moderate degree of pyorrhea alveolaris. The tonsils are large and chronically diseased.

The nasal turbinates responded normally to vasoconstrictor medication. On tilting the head forward there was a copious discharge of thin, creamy mucopurulent material from the right nostril. Transillumination demonstrated no abnormality of the sinuses except for slight clouding of the right antrum. On attempting to pass the electric nasopharyngoscope a firm obstruction was encountered in the dorsal portion of each nostril. The oropharynx was then anesthetized and the Haslinger palate retractor inserted. This permitted an excellent view of the obstruction, using the laryngeal mirror. The adenoids are of normal adult size and the eustachian tubes are unobstructed. The mucosa over the convex obstruction to each choana is very pale.

Roentgenographic studies of the sinuses reveal normal development and no evidence of pathology. Instillation of radio-opaque media into the nasal cavities demonstrates complete dorsal obstruction of both nostrils, marked narrowing of the transverse diameter of the dorsal portion of each nostril, and marked thickening of the dorsal part of the nasal septum.

The patient was admitted to the hospital on February 27th. Preoperative medication consisted of morphine and atropine. She was taken to surgery on the morning of February 28th. Because of the complete inability of the patient to breathe through the nose it was decided to induce anesthesia

with intravenous pentothal sodium. After muscular relaxation was obtained, an airway was inserted into the mouth and a surgical plane of anesthesia obtained with open-drop ether. A Davis mouth gag was then inserted to replace the airway and to permit adequate exposure of the operative field. Sand bags were placed under the shoulders. Following the technique described by Owens, a U-shaped incision was made down to and including the periosteum of the hard palate. The incision was started at the second molar tooth on the left and brought forward to the incisive foramen, thence it was continued dorsalward to the second molar on the right. The soft tissues comprising this flap, including the periosteum, were elevated in one block back to the free margin of the bony palate. The greater portion of the nerves and blood vessels from the palatine canals were thus preserved intact in the substance of the flap; this procedure insures viability of the flap when it is repositioned. Using a curved periosteal elevator, the mucosa was elevated from the nasal side of the bony palate ventralward until the choanal obstruction was encountered on each side. The bony palate was then removed ventralward with a Hajek rongeur up to the choanal obstruction. At this stage a hand-drill was used to perforate the bony palate into the nasal cavity on each side. This perforation was enlarged with rongeurs until the obstruction could be visualized on both the nasal and pharyngeal surfaces. The choanal obstruction, together with the small remaining overlying portion of the palate, was attacked with rongeurs and a small chisel. The bony choanal obstruction was thus removed completely to the vault of the nasal cavity on each side. The mucosa covering the nasal side of the obstruction was removed with scissors. At the beginning of the operation it was my intention to preserve the mucosa covering the pharyngeal surface of the obstruction and to use it for turning a mucosal flap over the denuded bone; this mucosa was found to be very tough and fibrous. Because of the nature of the mucosa and the fact that there was not sufficient space to permit placing a retaining suture lead to the decision to remove this mucosa completely with clean and sharp dissection. At this stage there was a

free passage from the nose into the nasopharynx on each side. A portion of the dorsum of the vomer was removed with the chisel. The dorsal portion of the nasal septum consisted of hard and very thick bone. The operation was now complete except for replacing the flap. Surprisingly little bleeding was encountered and at no stage was it troublesome.

As has been stated previously, there was a prominent ridge of bone running the entire length of the midline of the bony palate, and the soft tissues overlying this ridge were very thin. It appeared that the bony portion of the nasal septum had been wedged into the mouth between the palatal processes of the maxillae. To facilitate replacement of the flap and promote viability of the tissues, this sharp ridge was lowered with the chisel. The flap was then placed into position and sutured with interrupted black-silk sutures, each suture incorporating the periosteum. No packing nor obturators were placed in the nose.

The evening following the operation the patient was taking a liquid diet, was breathing through both nostrils, and was comfortable. Both nasal cavities were douched with normal saline the day after the operation. The nose was again douched on the second postoperative day and the patient discharged from the hospital. The sutures were removed on the fourth postoperative day and the nasal douches repeated every other day to the tenth postoperative day. The oral incision healed without complications and she was taking a regular diet one week after the operation.

Her postoperative course has been uneventful and there is no evidence at this time of secondary closure of the choanae. Nasal respiration is adequate except for collapse of the left nostril on deep inspiration.

SUMMARY

1. Congenital bilateral choanal occlusion occurring in the adult is an extremely rare condition.

2. Choanal occlusion must be considered in every case of nasal obstruction.

3. The relationship of choanal occlusion and asphyxia neonatorum has not been established. In every case of asphyxia in the newborn the patency of the choanae should be determined.

4. A case of bilateral occlusion occurring in an adult is reported.

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Fever Blisters—I want to take this opportunity to propose a treatment for fever blisters which is so simple that I have hesitated for a long time to publish it. In my hands, and in the hands of others who have tried the remedy, it appears that the application of an ordinary styptic pencil to the blister is the answer to the problem. The styptic should be used as early as possible after the blister begins to appear. First, lightly moisten the area and the pencil tip and then rub the caustic gently and thoroughly into and over the vesicle area until a slightly smarting and drawing sensation occurs. Shortly, the pain disappears and the burning ceases, and cure begins. When treated early, only two or three applications are necessary. In applying the styptic, care should be taken not to over-irritate by too much rubbing.

Sometimes an early infection of a secondary type ensues and the treatment should be followed by using a mild ointment, such as boric acid or aureomycin.—Norris, J. M. A. *Georgia*, April '52.

INTRAMEDULLARY FIXATION OF FRACTURES

JAMES S. DuBOIS, M. D.

Enterprise, Alabama

If one can assume that the present day concept of fracture healing as being a purely local phenomenon is correct, then that method of treatment which allows the most active function of the extremity during the healing phase is the best method, not only from the standpoint of successful bone healing but also from that of a short convalescence time. This, of course, assumes that the method can be adequately carried out.

Whether or not the theoretically best method is practicable in the individual case depends not only upon the patient and his fracture but also upon the qualifications of the doctor and upon the organization and equipment available.

No matter what method is used, its general purpose should be to return the patient as rapidly as possible to his accustomed economic and social capacity with as little loss in time and money as possible and with a minimum of suffering.

Post-reduction immobilization should aim at as rigid a fixation of the fragments as is possible coincident with as extensive a mobilization of the extremity as is compatible with the method of treatment used.

In the evolution of the modern day methods of fracture therapy, the accomplishment of this first requisite (rigid fixation) usually has been attained at the expense of the latter (extensive mobilization).

From the day of Hippocrates, when the method of closed manipulative reduction and external fixation was extensively used, down to the present time the ill effects of long continued immobilization (as manifested by atrophy of disuse and joint stiffness) have been recognized, and overcoming this has been a great stimulus in the continued search for newer methods of fracture treatment.

Chronologically, the methods used in this gradual evolution have been: first, closed manipulative reduction and external fixation, the external fixation being greatly augmented by the introduction of plaster of

paris; second, continuous traction, used at first throughout the entire healing period but later supplemented by the use of external fixation after enough fibrous union had occurred to prevent displacement; third, open reduction and internal fixation by wires, screws, plates and bone grafts; fourth, external skeletal fixation as exemplified by the Stader splint, Roger-Anderson apparatus and others; and last, the recently popularized method known as intramedullary fixation.

Although the method of closed reduction and external fixation with plaster is a time-honored and still indispensable procedure, it has the distinct disadvantage of not permitting early joint motion and also does not securely fix the position of the fragments after reduction. Muscle atrophy and joint stiffness are common sequels of such immobilization.

Balanced traction-suspension is another good non-traumatic method that can be easily applied. However, it will not satisfactorily reduce all fractures. It does not give a very rigid fixation of the bone ends and the method requires close and constant supervision as well as a long period of hospitalization.

Open reduction and internal fixation by means of wires, screws, plates and bone grafts is a very valuable method of treatment and oftentimes must be used, but usually has to be supplemented by external methods of fixation with resultant disability from joint stiffness and muscle atrophy.

Closed reduction and external fixation by means of such apparatus as the Roger-Anderson, Griswold, Hanes and Stader splints is a useful adjunct in fracture treatment. Theoretically, this method offers the advantage of closed reduction and maintenance of reduction that skeletal traction offers, as well as its ease of adjustment, and, too, since it does not extend beyond joints, there should not be any restriction of motion. This method, however, has not received wide acceptance.

The most recent method introduced in the treatment of fractures, that of *Intramedul-*

lary Fixation, approaches closest the two main objectives: rigid fixation of the fragments and extensive mobilization of the extremity.

This method, however, as has been the evolution of our entire fracture armamentarium, was not developed overnight. The first recorded use of its principle occurred as early as 1907 when Lambotte reported axial pinning of the small bones. Credit for initiating its popularity goes to Kuntzer of Kiel, Germany, who reported his experiences to the German Surgical Congress in 1940. Now, it has been definitely shown that the first reported work of this kind in America was that of Dr. Rush of Meridian, Mississippi, who, in 1937, reported his use of this principle in the treatment of a Monteggia fracture of the elbow; and again in 1939 in the case of a subtrochanteric femoral fracture. Since that time he has perfected an intramedullary nail, or pin as he prefers to call it, which has rapidly gained in its popularity and which will, in all probability, continue to be favored increasingly because of its relative ease of application and because of the fact that it can be used in a considerably larger variety of fractures than the other nails offered us today.

The use of an intramedullary nail consists of passing a stainless steel pin throughout most of the length of the bone to transfix the fracture by traversing the medullary canal. For immobilization, the large nail depends upon the fact that it is impacted within the medullary canal like a ramrod in a gun barrel; however, it has been conclusively shown by Rush that such is not absolutely necessary in that the normal opposing action of the muscles of the involved extremity will aid in maintaining immobilization by impaction if only the pin used will allow the bones to glide upon it. It is the utilization of this natural muscular force present in a fractured extremity that has permitted such a varied use of the Rush pin in fracture fixation. It is considerably smaller in diameter than the more bulky nails. By virtue of the fact that it acts as a spring within the bone, its three-point pressure along with the balanced natural muscle pull maintains adequate fixation.

One point of issue concerning the rationale of intramedullary nailing is whether healing is retarded or encouraged by this

form of fixation. In 1949, Eggers, Shindler and Pomerat, in their investigation of the contact-compression factor, concluded that, when present, it stimulated osteogenesis and fracture union even in the presence of infection. Excessive pressure causes necrosis of the compressed bone and lack of pressure fails to stimulate osteogenesis. The ideal degree of compression seems to be midway between, and that afforded by normal or physiologic muscle pull seems to be ideal.

Clinically, the use of intramedullary fixation in the treatment of ununited fractures with resulting union tends to bear this out.

Where the facilities for operative work on bone as regards equipment, technique and personnel are adequate, it is the belief of many that operative reduction, with internal fixation rigid enough to withstand functional strain, is the ideal method for fractures of the long bones in adults.

In the operation of a small hospital within a county where there is no provision whatever for the care of indigent patients, and where the majority of one's clientele is of moderate income, and in a state where the maximum medical expense required by the Workmen's Compensation Act does not exceed \$500.00, one is forced to adopt, at times, compromising measures. A femoral fracture requiring six weeks' hospitalization can more than usurp the possible rewards for treatment, and in a hospital, in which deficits are corrected, not by taxes but by the remains after taxation, this can be disastrous.

Early in our practice we elected open reduction and internal fixation supplemented with external plaster fixation as the method of choice in fractures of the shaft of long bones which otherwise would have required continuous traction over a long period of time. Although the period of external fixation was materially shortened by virtue of the internal fixation, joint stiffness and muscle atrophy were still major factors with which to contend, especially in the absence of any well organized physiotherapy department.

The use of intramedullary nailing or pinning has obviated the latter, however, for not only is the patient able to be up and about, out of the hospital early, but he has

very early active use of all joints, and muscle atrophy and joint stiffness do not occur. The contrast is gratifying to note.

Intramedullary nailing or pinning entails, in our hands, an open reduction. Although in certain fractures without displacement the pin can be introduced through a drill hole near one extremity of the bone and be driven across the fracture site blindly, it is generally considered wise to expose the fracture site in the case of displaced fragments with as little disturbance of soft tissue and periosteum as is possible and to traverse the fracture site at the time of alignment of the bone ends. *It is not a procedure which requires any great deal of skill on the part of the surgeon.* The Rush nail has proven so versatile that it may be introduced either through the extremity or side of the bone and thus it is possible to adapt it to a large variety of fractures of all the long bones of the body.

Our experience with intramedullary fixation has been confined to the shafts of the humerus, radius and ulna in the upper extremity and, in the lower extremity, to the shaft of the femur from the subtrochanteric region down to the mid-point of the lower third. In the tibia it has been used from the mid-third downward, including malleolar fractures.

In the upper extremity it is possible to fix the clavicle, the entire humeral shaft, entire shaft of the radius and ulna, and the metacarpals. In the lower extremity, the upper two-thirds of the femur lends itself most readily to this method although now in the hands of some operators fractures of the lower third are being successfully pinned by the passage of double pins upward into the shaft from a point of entrance at the lateral and medial epicondyles. Fractures of the middle third and upper part of the lower third of the tibia can be easily pinned by the passage of the pin downward from a point of entrance near the tibial tubercle, and fractures of the lower third secured by passing the pin upward into the shaft from a point of entrance well down on the internal malleolus.

In fractures of the ankle with displacement, the internal malleolus can be easily secured with a short pin while the fibula can be secured by a longer pin passed up-

ward from the external malleolus. Oftentimes a canal must be made in the lower fibula by using a long drill of the same diameter as the pin to be used. By transfixing the fibula at the same time the tibia is pinned, the tendency to rotation that is seen in certain spiral, oblique, and comminuted fractures is obviated.

In multiple fractures the bone can be aligned by threading the fragments upon the pin and in severely comminuted ones, after the larger fragments have been realigned, the smaller fragments can be maintained in position by means of wire. In severely comminuted femoral fractures we have preferred the Kuntzer cloverleaf nail to the Rush nail because of its greater size and rigidity.

A compound fracture does not contraindicate the use of this method. Rather, it is to be favored for one is not hampered by plaster casts in the proper care of the wound should infection occur.

Because of the advantages of early ambulation and mobilization it is the method of choice when possible in the aged.

Open reduction in young children is rarely necessary. We have in two instances, however, used this method in the treatment of shaft fractures of the femur in a boy nine years of age and a girl of twelve years with gratifying results, care being taken at the time not to disturb the growth centers of the bone.

Although our experience with intramedullary fixation as a means of handling fractures has not been extensive enough to be of any statistical value, our clinical impression has been a very favorable one and we are convinced that in the small hospital such a method can be carried out to a successful conclusion for both patient and doctor.

Once the diagnosis of pulmonary tuberculosis has been confirmed, assuming a reasonable degree of intelligence on the part of the patient, the first obligation facing the attending physician is to explain carefully to him some of the fundamental characteristics of his disease and advise him on a course of treatment in the light of what is known at that time about the patient's physical, emotional, and economic condition. The physician should begin to "condition" the patient for the journey ahead of him.—*Elliott Mendenhall, M. D., and Robert R. Shaw, M. D., J. A. M. A., February 23, 1952.*

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RELATIONSHIP BETWEEN INOCULATIONS
AND POLIOMYELITIS

Because of widespread discussion and public alarm last year concerning the possible relationship between various types of inoculations and poliomyelitis, the State and Territorial Health Officers Association asked the Public Health Service, Federal Security Agency, to sponsor a study of the question and issue a clarifying statement. Subsequently, the Public Health Service, on March 14, 1952, sponsored a meeting of 41 poliomyelitis investigators, epidemiologists, pediatricians, allergists and health officers. The National Foundation for Infantile Paralysis helped plan and participated in the conference.

The conference voted unanimously in favor of the conclusions contained in the following statement which has been accepted by the Public Health Service and transmitted to official health agencies, to the medical profession and to the general public.

There is no definite evidence that an increase in the number of cases of poliomyelitis has occurred as a result of injections of vaccines, drugs, and other medicinal agents. There is evidence that injections for the prevention of diphtheria, whooping cough and possibly tetanus, when given during an epidemic of poliomyelitis, may, on rare occasions, localize the paralysis in the inoculated arm or leg. There is no satisfactory evidence that other types of injections have any effect on the localizations, frequency, or severity of poliomyelitic paralysis. In the small number of persons with localization of paralysis in the inoculated limb, the injections, for the most part, were given about 7 to 21 days prior to onset, which corresponds to the usual incubation period of poliomyelitis. This has raised the question as to whether or not inoculated persons have a greater chance of contracting poliomyelitis during an epidemic.

There is as yet no final answer to this question, but it is a fact that, even if there should be an increased chance, it is extremely small. Many thousands of poliomyelitis cases occur every year among children who have not had any injections during the pre-

ceding few months, and thousands of children have received injections for whooping cough, diphtheria and tetanus during poliomyelitis epidemics and have not developed the disease.

Diphtheria, tetanus and whooping cough are serious diseases which can be prevented by immunization. Unchecked, these diseases present a far greater hazard than poliomyelitis. The benefits derived from immunization against these diseases far outweigh the questionably small increased chance of contracting poliomyelitis. However, even this questionable risk can be avoided by carrying out these immunizations when poliomyelitis is not epidemic in the community. There appears to be no good reason for withholding these immunizations during the summer months in communities that are not having an epidemic of poliomyelitis.

Furthermore, poliomyelitis is at all times so rare in infants under 6 months of age, and the danger from other infectious diseases, particularly whooping cough, is so great, that it is advisable to continue the immunization procedures for this age group even during a poliomyelitis epidemic. In adults also, poliomyelitis is relatively so infrequent, that when there is a need for immunizing or therapeutic injections, such injections should not be withheld.

Certainly no parent should object and no physician should hesitate to administer a needed antibiotic, drug or other injection for treatment of disease at any time. When there is immediate danger from diphtheria, whooping cough or tetanus, the preventive inoculations should be given to all threatened age groups even during a poliomyelitis epidemic. In the final analysis the decision as to when an immunizing or therapeutic injection shall be given to an individual patient must rest with the physician.

OPHTHALMIA NEONATORUM AND SILVER NITRATE

The law of Alabama specifies that "any physician, midwife, nurse, or other person in attendance on a confinement case shall, within two hours after the birth of the child,

use one of the following prophylactic solutions for the prevention of infantile blindness or ophthalmia neonatorum, two drops of the solution to be dropped in each eye after the eyelids have been opened: a one per cent fresh solution of nitrate of silver . . . or such other solution as may be prescribed by the State Board of Health."

Of late there has been considerable discussion as to the wisdom of substituting penicillin for silver nitrate but this step the Board is not willing to take now, the National Society for the Prevention of Blindness having recommended that the use of silver nitrate be continued. It was the wish of the Board that this decision be made known to the profession through the columns of the Journal.

NOSEBLEED

"As many small boys know from experience, and others will learn soon, bleeding from the nose, as a rule, ceases spontaneously. Epistaxis then can be classed as a relative emergency by the physician. I do not think any of us need rush to see patients who have epistaxis because if enough time elapses the bleeding of about 80% of them will be checked without treatment. However, it is well to remember that when bleeding is persistent, a serious degree of anemia and occasionally death may result.

"Deficiencies in the clotting mechanism of the blood are seldom contributing factors in nasal hemorrhage. The bleeding is often due to a leak in the side of a vessel, which simply bursts open. When an older person has such a leaking vessel, the vessel tends to gape because of the sclerotic changes in arteries and veins and atrophy of smooth muscle. The bleeding of older persons, particularly, tends to repeat itself for about two weeks; it probably takes about that long a time for scar tissue to form and obliterate the vessel permanently."

Thus does Hallberg¹ begin his discussion of this condition so frequently encountered in practice but so seldom mentioned in med-

1. Hallberg, Olav E.: Severe Nosebleed and Its Treatment: J. A. M. A. 148: 355 (Feb. 2) 1952.

ical literature. Hallberg states that from 1930 through 1950 212 cases of epistaxis were treated in the hospital by physicians of the Mayo Clinic. About 10% of these cases were due to trauma. More than 50% of the patients were 55 or more. "Treatment consisted of the usual conservative procedures, packing and electrocoagulation, and, in a few cases, ligation of the external carotid artery together with supportive measures."

Seventeen of the 212 patients failed to respond to conservative treatment and required ligation of the external carotid artery.

The Rochester investigator tells us that "Each physician has his own favorite method of controlling nasal hemorrhage. The principal object is, however, to stop the flow of blood as soon as possible.

"On admission to the hospital the patient should first be examined for symptoms of shock and for active bleeding. If the patient is an adult, he should be given $\frac{1}{4}$ grain (0.016 gm.) of morphine by hypodermic injection. Children should be given hypnotics, the dosage depending on the age. With close observation of the patient it is not difficult to distinguish between shock due to hemorrhage and the shock-like appearance of a patient who is nauseated from swallowing too much blood. If there is uncertainty as to the condition of the patient, transfusion of blood should be employed." And he further asserts that "if anterior packing alone fails to stop the flow of blood, post-nasal packing should be employed."

Hallberg has touched upon a difficult and important form of treatment. Every seasoned physician knows and agrees with the Rochester clinician that the great majority of cases of epistaxis will cease or can be stopped without much difficulty and without too great a loss of blood. But experienced doctors also know how extremely difficult it is, and at times almost impossible, to stop the hemorrhage in the severe cases. The fact that a great many practitioners are not adept in post-nasal packing is a contributing factor also. Hence if the doctor who first encounters a case of persistent epistaxis is lacking in the equipment or training to pack the posterior nares properly

he should either call a specialist promptly or better still transfer his patient to a hospital.

THE NEW PHYSICIAN

During this month many new physicians have joined our ranks. It might be timely for us to use this opportunity to welcome these young men and women into our time-honored profession of medicine, so beleaguered now by forces at loose in the world today. For it is these new additions upon whom we must call to forge the defense of all that we now hold sacred.

Socialized medicine is but one of the many threats that have resulted from the world trends of today. It disrupts the very foundations of our profession as we know it now. "Equalization" in industry, labor, and professional fields is the doctrine of today. There is an instinctive desire to wish that everyone were on the same level. These beliefs have fashioned the ideologies of socialism and communism.

Remember that Mr. Ewing and his colleagues, who are endeavoring to pass laws favoring Government Medicine, could not continue unless they had support from a considerable segment of the population. A smart politician does not fight the wishes of his electorate.

Just what has brought the physician forward as the prime target of attack?

Physicians have become so accustomed to being accepted as leading members of their city that it is with a sense of shock that they occasionally find someone who actively dislikes them and talks against them.

Unfortunately, every day, physicians are making enemies for themselves and for the private practice of medicine by their actions. Some are thoughtless or selfish—a few, greedy or dishonorable.

One of the main causes of our profession being a prime target today is the failure to grasp or to appreciate the idea that medicine is a profession of service. We should accept this doctrine when we become physicians. The public expects big things from us; we must not fail them.

Don't forget that envy is a potent, active force in making people dislike and resentful of you. We, as a profession, have long

ignored this important little fact in our dealings with people. Isn't it frequently true that the young doctor, as soon as he goes into a practice, purchases the "flashiest" car he can find, his wife begins to dress better than all the neighbors, and he builds the finest home in town? It is common knowledge that the "young doc" is getting rich fast.

Notwithstanding the fact that all these things are manifestations of latent desires, built up through four or more years of denying oneself all but the barest necessities; the man who has to pay you what might be half-a-week's wages, or the woman who pays you part of her social security check, doesn't realize or comprehend this factor. All that matters to them, as to so many of our people, is TODAY. What hap-

pened, or what you endured yesterday, is forgotten.

Naturally, he is envious, and we apparently are indifferent or oblivious of what we are instilling into the public at large. Individuals have an innate jealousy of people who seem to get ahead even though they are rendering them assistance in doing so.

The national program of the American Medical Association, in combating socialized medicine, is all well and good, but individually, I am sure, we could do much to improve the doctor-patient relationship, that most important basis for the good practice of medicine. In doing so we could carry our share of the battle in the fight for survival that I am sure has just begun.

H. L. H.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

WE HAD BETTER AWAKEN

W. A. Dozier, Jr.

Director of Public Relations

It is all too seldom that one comes across an article decrying the reckless way the American Government has gone on and on ever increasing the national debt. Mr. Thurman Sensing, in the Southern States Industrial Council Bulletin of April 15, has a very timely and apropos editorial entitled "Debts Are Always Paid—By Someone." Also, from time to time, Dr. Frank Dickinson of the A. M. A. Bureau of Medical Economics writes on the subject. It still seems that far too few people bother themselves about the matter.

One cannot be certain why we as a people have failed to become disturbed by the national debt. Perhaps a good portion of our citizens could tell you approximately at what figure the debt stands, but it is doubtlessly a safe assumption that very few could or would even try to explain what it means to us as a nation and as individuals. Most likely the answer you would get would be to the effect that it is high finance and far

too complicated to be understood. Such an answer certainly is not conducive to any corrective action, and, even worse, it points up an attitude of complete acceptance. If something is "high finance," does that automatically mean that we are to ignore it or refuse to try to understand it and thus arrive at the root of the trouble?

A good number of people would tell you that the figure is so large that their minds cannot comprehend it. To most of us that is probably true, but let us not overlook the fact that, no matter the size of the figure, basic rules of arithmetic and of economics apply just as much as they do to your own family budget. We need to apply some of those basic ideas to our present fiscal policy, or else we are riding down a very dangerous road that will likely land us in bankruptcy.

Perhaps the most pernicious answer you might get would be that it does not matter. We owe the debt to ourselves; so we do not have to worry. That answer has been used as an argument, and nothing more will be said about such a foolhardy approach than to remind each person that if he applies such answers and techniques to his own per-

sonal finance, he will not be solvent very long.

There are a few basic principles above two plus two equaling four that should be remembered. First, let us not forget that a debt is a debt, no matter to whom it is owed, and that debt must be paid sometime, somehow, by someone. At the rate which we are going today, our huge debt will have to be paid by future generations. They are being saddled unfairly with a tremendous burden that will keep them tied down for many, many years to come. This is a moral injustice that the present generation is doing to those who will follow us.

Mr. Sensing points out another basic principle when he states that the so-called prosperity of the present is not prosperity at all. In his words: "Of course, a nation, again just like an individual, can put on a great show of prosperity by mortgaging itself for all or more than it is worth and living high on the proceeds. And that to a large extent has been the source of our apparent prosperity during these years. We have been living off accumulated wealth. We have been living on borrowed money. We can cry prosperity from the rooftops, but there is no prosperity so long as we continue gambling with the solvency of the nation and living on the credit of our children."

Of course the question arises as to what can we as individuals and as groups do about the situation. First and foremost, each of us can make an effort to understand the situation. It is not incomprehensible even though it will require some mental gymnastics. Once you understand the situation, you can explain it to others and arouse them against a continuance of our foolhardy outlook. Once enough people understand what has been going on and what it means, it will be possible to make our voices heard to those who hold the reins of administration. Until we, the people, demand that a sounder system be followed, you may rest assured that matters will go on and on in their present manner.

Expert Medical Advice for Foreign Countries—
The United States of America has been particularly fortunate as its health activities have in-

creased. The availability of education, the flow of materials for production, and the high standards of living have permitted this nation to assume a leadership of which it can be proud. And yet at the same time this leadership can be a means of flagrant abuse if it is not closely watched. For example, countries that are temporarily less fortunate but who wish help so that they too can apply the benefits of modern knowledge to their people may turn to the United States for advice. If the services of properly qualified persons are proffered, the outcome will be satisfactory to all. Too often, however, when one government seeks help from another, the wrong "experts" are sent in response. Instead of men and women who are qualified on the basis of actual experience, others who qualify simply because they hold the right titles in some organization or seem deserving of a junket with expenses paid are dispatched, sometimes with attendant publicity. There have been reports of so-called experts being sent to give advice in other countries on health topics in which they had not had any experience other than possibly some administrative background. This situation at best can only cause bewilderment, but, at worst, which usually is the case, it will cause resentment and ill will. When India, for example, requests expert advice on some of its problems, it truly desires the advice of experienced clinicians and health workers and not the conjectural reasoning of some swivel-chair theorist. It is a serious mistake to send someone who must first gain experience in the area to which he is sent in response to a call for help. The chances are excellent that the men and women in his new locality already know more from experience than he can possibly learn while he remains there. The inquiring country will certainly not believe it has a high standing in the eyes of the nation to which it appealed if it receives second rate or third rate advisers.

Sometimes voluntarily formed teams from universities, clinics, public health centers, or elsewhere are sent to areas needing help. These teams usually have their expenses paid, but it is not unusual to learn of men and women who go at their own expense. These are almost without exception composed of fully qualified scientists. Unfortunately, there are not many persons in these days of high taxes who can afford to sacrifice so much time and money. There is, however, a potential group of experts who would be delighted to provide help if their advice was sought; and it would cost little to acquire their services, perhaps only traveling expenses and a modest stipend for living, which could be promised even by the country seeking help if it were permitted to choose its own experts when it asked for expert guidance. This group consists of the men and women about to retire from their normal activities, whether it be medical practice or university or other life. Many would welcome the opportunity to offer their services for a few weeks or months or even for several years if they could be assured of living and incidental expenses.—*J. A. M. A., May 31, '52.*

TRANSACTIONS OF THE ASSOCIATION

1952 SESSION

Concluded

Last Day, Saturday, April 19

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 9:00 A. M. by the President, Dr. T. Brannon Hubbard.

The report of the Board of Censors was rendered by the chairman, Dr. E. V. Caldwell of Huntsville.

THE SEVENTY-EIGHTH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORTS AS A STATE BOARD OF MEDICAL EXAMINERS AND AS A STATE COMMITTEE OF PUBLIC HEALTH

E. V. Caldwell, M. D., Chairman

PART I

The State Board of Censors has the honor to submit to the Association its Seventy-Eighth Annual Report.

THE PRESIDENT'S MESSAGE

The Board is deeply impressed by the thoughtful and scholarly address of the President and urges that each member of the Association study the many matters covered so ably by him. The necessity for unified action on the part of all physicians was never so apparent as at present. The President rightly pays tribute to the Woman's Auxiliary and to the place that it can occupy in our relationships with the public.

The whole question of public relations demands the considered judgment of the best brains in our Association so that an answer may be found to some of the problems posed by our President. Fees, hospital costs, community responsibility, the availability of medical care at all times, illegals—these are some of the questions demanding solution.

The President commends the Medical College of Alabama for its activities and the progress that is being made in training the future medical leaders of this state. Every thinking physician will support the efforts being made.

The Board is deeply impressed with the references in the President's Message pertaining to the admission of the Negro physicians of this state to organized medicine. For a man with the fine Southern lineage possessed by our President, to take this forward looking step is most

commendable. The Board feels that some action in this matter should be taken. The Board calls to the attention of the Association the fact that under the present constitution of the Association any county society may elect Negro physicians to membership in the local society and he will automatically become a member of the State Association. To date no society has elected a Negro physician to membership. In the past five years the Board has studied this problem intensively. Several states have already attacked the problem. One of the most thought provoking solutions to the question has been evolved by the state of Kentucky. This State Association has chartered a state-wide society whose membership is made up of the reputable and licensed colored physicians. This society has the same status and enjoys the same privileges as a county society. This may not be the solution to the problem in Alabama but the Board feels that the State Association should make an attempt to solve the problem. The Board recommends to the Association that the incoming President be instructed to appoint a committee to study this matter and to make recommendations at the next meeting of the Association.

The Board recommends adoption of the President's Message as a whole.

The Message was adopted by the Association.

REPORTS OF VICE-PRESIDENTS

In each district of the state there was one regional meeting held and in every instance the attendance was good, the programs excellent, and the general results all that could be hoped for. The question of meetings at the county level is still a problem mentioned by all four Vice-Presidents. The larger societies can and do have regular meetings but the small societies meet rarely. The Board still feels that group meetings for two or more contiguous counties is feasible and urges that attempts be continued in this direction. The zeal and enthusiasm of the Vice-Presidents is to be commended and each this coming year will have the heavy responsibility of promoting our legislative program in his area.

The reports are recommended for adoption.

The reports were adopted.

REPORT OF THE SECRETARY-TREASURER

The Secretary's report indicates a new high in Association membership which is encouraging as an indication of the solidarity of the profession. The large number of deaths of members each year is probably to be expected due to the

number of physicians in the older age brackets but it is distressing to have the report indicate how many of our colleagues are no longer with us.

The report as treasurer shows for the first time in many years that the Association operated with a deficit. The reserve funds are ample to care for this but a continuing deficit cannot be permitted.

It is recommended however that the Association continue under its present plans for this year, and if indicated that the Secretary-Treasurer bring in proper recommendations at our next meeting.

The auditor's report indicates proper handling of our funds.

The adoption of the report is recommended.

The Association concurred in the Board's recommendation.

REPORTS OF COMMITTEES

COMMITTEE OF PUBLICATION

The deficit in the cost of Journal operation and the expected increase in that deficit poses a problem that needs solution. It probably can be postponed for another year in order that the effect of increased costs and the effect of increased advertising rates may be properly evaluated. The Journal is providing a medium for presentation of worth-while articles however and is a real asset to the Association. The Board recommends the adoption of the report.

The report was adopted.

MEDICAL SERVICE AND PUBLIC RELATIONS

The progress report of this Committee indicates that a wide variety of subjects claimed its attention during the year and that the time of our Director is fully occupied. Most of the projects are long term ones and progress can only be reported at each annual meeting of the Association. This is particularly true in the field of education which must always be with us.

Some progress has been made in working out a program of physician placement but the Committee feels that the services of the Farm Bureau and County Agents should be utilized in determining the needs of communities. The Board concurs in this belief and is requesting further study.

Legislative matters claimed a great deal of effort during the past year and the experiences gained should be extremely valuable for future meetings. Lobbying is only of limited value and the real work of convincing legislators must be done by their home county physicians. Our experience in attempting a revision of the licensure laws, while not successful, demonstrates what must be done before another legislature meets. The need for some revision in our licensing laws has been apparent for a long time. Unlicensed practitioners of various schools of therapy have come into the state and without benefit of any control have set themselves up to diagnose

and treat the ills of Alabama citizens. Attempts to check them through the courts have not been successful, so that we have two choices: let them continue to grow unchecked or establish a licensing system that will keep the unfit out. The Board feels there can be only one answer and this Committee has prepared a blue print of action to accomplish this end. The Committee has outlined a real program and the Board bespeaks the enthusiastic backing of every member of the Association to carry it through.

The Board approves the projected budget of the Committee and recommends the adoption of this report.

The Association endorsed the recommendation of the Board.

MENTAL HYGIENE

Continued progress has been made in the field of mental health. The apparent interest of the state was evidenced by a grant for this work for the first time. Local groups have been very active and there is a gradual improvement in the knowledge available to the public of all the aspects of mental health. Much of this is due to the activities of the State Mental Health Society which has worked very closely with the official state group.

The Board recommends adoption of the Committee report.

The report was adopted.

MATERNAL AND CHILD HEALTH

A new low in the maternal death rate for the past year is a gratifying report and reflects the improvement in maternal care gradually being evolved. The publication of the Five-Year Study of Maternal Deaths in Alabama was the work of this Committee and sets out the trouble spots in Alabama. The work involved was extensive but the product justifies the labor.

The Board feels that the physicians of the state are not yet ready to comply with the suggested change in reporting of fetal deaths that would require the reporting of the termination of all pregnancies regardless of the period of gestation. Unless there can be widespread support the present procedure of reporting stillbirths (over 5 months) would be of more value. The Board therefore recommends that the present laws remain unchanged until such time as it is apparent that widespread acceptance of the new proposals would be effective.

The Board recommends the adoption of the report.

The recommendation was concurred in.

CANCER CONTROL

The committee report on cancer progress is both optimistic and pessimistic in that progress has been made but no new startling developments in the field of diagnosis and treatment have occurred. Much was hoped of the new isotopes and of hormones, but in general we still have the same methods of treatment—x-ray, radium and surgery.

The state-aided clinics are functioning well and the limitation on funds is the great obstacle to the extension of the program. The Legislature made available additional funds but costs have risen faster than the appropriations, so the net result has been no increase in patients handled.

The suggestion of the Committee for a joint meeting of all those interested in the cancer program would seem to be well taken and the Board concurs. The adoption of the report is recommended.

The Board's recommendation was adopted.

PREVENTION OF BLINDNESS AND DEAFNESS

The close working arrangement between the Medical College of Alabama and the Alabama Institute for the Deaf and Blind would appear to be an ideal one. The report of the Committee indicates some of the benefits accruing and it is felt that the Association should commend all concerned for this program. The Board recommends the adoption of the report.

The report was adopted.

POSTGRADUATE STUDY

The plan of providing speakers through the Medical College of Alabama for district assemblies was continued during the last year with a total of nine assemblies being held. This still seems to be the best approach to the dissemination of the newer knowledges and it is hoped that more areas of the state will plan to utilize the program. Financially the Committee is in good shape and the Board recommends to the Health Department that it continue to honor vouchers up to \$1500.00. Association funds should be used to supplement this if needed.

The Board recommends adoption of the report.

The Association adopted the report.

PHYSICIAN-DRUGGIST RELATIONSHIPS

The report of this Committee should be carefully read by every member of the Association. From a joint meeting with a similar committee of the Alabama Pharmaceutical Association has emerged a listing of some of the problems affecting the relationship of the two groups and a group of recommendations as to how to meet these problems. The frank expression of disapproval of certain practices on the part of the druggists and of another group of practices on the part of the physicians can only be beneficial. The Board recommends that joint meetings be held at the county level and requests this Committee to continue the study of a code of relations between the two professions.

The Board recommends the adoption of the report.

The report was adopted.

ANESTHESIOLOGY

The importance to good surgery of good anesthesia is apparent and this Committee reports on progress that has been made in making this anesthesia available. The cooperation of the

Lloyd Noland Hospital and of the Medical College of Alabama in providing training in this field is a valuable adjunct to the practice of good surgery and is to be commended.

The Board recommends adoption of the report.

The Association adopted the Board's recommendation.

TUBERCULOSIS

The progress made in the battle against tuberculosis is ably summarized by the Committee. Along with the rest of the Nation Alabama has made progress but the results seem to be slow when the knowledge available is considered. A high spot in the Alabama picture was the opening of the new District I Sanatorium near Decatur. This modern institution to care for 180 patients is a tribute to the people of North Alabama who financed the local share of construction.

The problem of financing the existing sanatoria and of the new ones that need to be built cannot be handled by local communities, so that the only logical answer is state support. The present state contribution is inadequate in every particular. The Board concurs in the recommendations of the Committee: (1) That there be a long-term building program to provide the necessary beds to hospitalize the tuberculous of the state, and (2) that the state, with local governmental assistance, finance the hospitalization program.

The Board recommends adoption of the report.

The Association agreed with the Board in its recommendation.

INDUSTRIAL MEDICINE

The activities of the Birmingham Health Council are cited by the Committee as an outstanding accomplishment. Management, medicine and public health are combining to provide a service to the industrial workers of the area. The Committee's suggestion that lectures at the Medical College of Alabama be included in the training program is respectfully referred to the authorities of the College for consideration.

The adoption of the report is recommended.

The report was adopted.

NURSE RECRUITMENT

The activities of the various groups concerned with nurse recruitment are outlined by the Committee and indicate the widespread interest in attracting sufficient young girls to fill the nursing ranks.

The Board recommends adoption of the report.

It was adopted.

VOLUNTARY HEALTH INSURANCE

After two years of study the Committee has definitely recommended against the establishment of a service contract in Alabama. All angles of the proposal were studied by the group and the opinion of the practicing profession was

sought through questionnaires. The conclusions therefore represent considered judgment at the present time.

The suggestion that each county society set up levels for low income groups and fix fees for this group is not believed to be a workable plan in most counties of Alabama. The traditional right of the individual physician to fix his fees for the individual patient would seem to be the method of choice in this group as in all other groups.

The Board is grateful to the Committee for its efforts on behalf of the Association and recommends that the Committee be discharged, having accomplished its mission. It is realized that there can never be a static condition with reference to insurance, hence the Board recommends that the six representatives of the Association on the Hospital Service Corporation's governing body be empowered to continue studies of this whole problem and report to the Association on indicated matters.

The adoption of the report is recommended.

The report was concurred in.

Whereupon, Dr. A. C. Jackson, Jasper, President of Blue Cross-Blue Shield of Alabama (formerly the Hospital Service Corporation of Alabama) asked that he be permitted to discuss the subject, and his discussion follows:

Dr. A. C. Jackson: Having served as President of Blue Cross-Blue Shield of Alabama for the past twelve years, I wish to make a few statements of fact: The Corporation was organized in 1936 by 18 hospitals as the Hospital Service Corporation of Alabama and was operated by authority of a special law passed by the State Legislature at its 1935 session.

In 1945 a committee appointed by the Medical Association of the State of Alabama appeared before the Executive Committee of the Corporation with a request that it add a medical rider to the certificate for hospitalization. As soon as possible we had the special law amended and three physicians designated by this Association were placed on our governing board and the Blue Shield program was started in the State of Alabama. The rank and file of the doctors over the state did not seem to realize that from that date on they were a part of the organization. As a matter of fact, the successful operation of this movement for both hospital and medical service depends on the wholehearted cooperation of the medical profession.

During the year 1950 it came to the attention of the management of this Corporation that about 60% of Blue Shield plans in the United States were selling what is known as a service contract to the low income groups in their areas and maintained a list of participating physicians to service these contracts. By invitation, in November 1950, the Board of Censors of the State Medical Association met with the management of the Corporation in its Birmingham office and, after full discussion of the issues, instructed the then president of the Association, Dr. J. M. Weldon of Mobile, to appoint a special committee to make a thorough study of the problem and report to the annual meeting of the Association in Mobile in April 1951. This Committee made its report last year and asked for further time to study the issues before making a recommendation to the Association as a whole. You have just heard the report of this Committee read to the Association this morning.

We, the management of the Corporation, learned indirectly from this Committee that there was a feeling that the medical profession did not have adequate representation on the Executive Committee of the Corporation and that the name of the Corporation did not indicate any connection with the State Medical Association. At the annual meeting of the Board of Trustees of the Corporation, the name was changed to Blue Cross-Blue Shield of Alabama, the number of physicians on the Executive Board was increased from three to six and these six doctors were given sole voting power on any matter that comes before the Board pertaining to the practice of medicine in the State of Alabama. The number of hospital executives on the Board was reduced from nine to six, and six business men who represent the general public, the consumers of hospital and medical service were added to the Board. Now we have a balanced Board with equal representation from the public, who put up the money, the hospitals, and physicians who render the service.

With money paid into the Corporation by the public, the management over the years has accumulated assets of \$4,000,000.00, which includes a modern office building in Birmingham, which has been built and paid for. During the fiscal year 1951, we col-

lected \$6,500,000.00 from the public of which 9.5% was for operating expenses, 5% went into reserve and 85.5% was paid to doctors and hospitals. We paid the doctors of this state \$1,800,000.00 during the year.

Blue Cross-Blue Shield is sponsored at the national level as the democratic and voluntary way to furnish prepaid medical and hospital care to the citizens of our country. The management of Blue Cross-Blue Shield of Alabama feels that it has built up a sound financial organization and one that this Association should be proud to be a part of. We, the medical profession of Alabama, whether we want to accept it or not, have been a part of this organization for the past seven years and the success or failure of the movement in the future, as in the past, lies on our doorstep. Let us all face up to the fact that this is not just a commercial insurance company to pay hospital and medical bills in the state of Alabama.

REPORT OF M. A. S. A. REPRESENTATION TO THE
STATE ADVISORY COMMITTEE FOR PRACTICAL
NURSE EDUCATION

"History of Program: (a) The Kellogg Foundation of Battle Creek, Michigan, knowing of the need for practical nurses in Alabama gave money to assist the state in training people to fit the particular needs of the state. They did not set up a standard or specification, and full control of the type of technician to be trained is left entirely to the state. (b) Several people from Alabama (largely from the State Department of Education) went to Michigan and several places where training of similar nature was being done. They were interested and enthusiastic over their visit and contributed most of the information about setting up a State Committee and getting it organized. (c) The Committee contains several people who are registered nurses and have a part in training registered nurses. A hospital administrator and an M. D. are on the Committee. Miss Ruth Horn, R. N., is director of the program. (d) The responsibility of the training program is entirely under the control of the Alabama State Department of Education."

Suggestion is made that the State Association, through its incoming President, contact the State Department of Education as to its willingness to allow more medical representation on the Advisory Committee for Practical Nurse Education, and if favorable that the incoming President appoint such additional representation.

The suggestion of the Board was adopted.

NURSE TRAINING IN VENIPUNCTURE

A communication was received by the President of the Association requesting an expression of the attitude of the Association on the question

of venipuncture and administration of intravenous medication by nurses, stating that if nurses should be expected to do this type of service, they should have training in such techniques while students in nursing schools.

The Board recommends that there be added to the R. N. training course one in venipuncture and intravenous therapy.

The Board's recommendation was adopted.

LEGISLATION

The State Legislature met in the interim since our last meeting and gave consideration to many matters affecting health. The demands of education took precedence over all other matters and hence the major state appropriations were made in that field. Some small increases were made to varying activities of the Health Department—including general operations, cancer, mental health and stream pollution. The subsidy to tuberculosis sanatoria was raised to a maximum of \$2 per day with an increase of \$150,000 per year in the appropriation. The appropriation for mass blood testing was eliminated, thus bringing to an end a program that had played a major part in the reduction of syphilis in Alabama. Mass testing in limited areas has been done since October 1st but large surveys are through.

Bills to provide for medical scholarships failed to pass and no serious consideration was given to the question of hospitalization of the indigent. Bills to provide for a uniform licensing system to include all those wishing to practice the healing arts died in committee.

The salary of the State Health Officer was raised to correspond to that of the other major department heads and the ceiling of general salaries was raised to a maximum of \$7200 per year which materially improved the status of non-medical personnel. No relief was given for medical personnel, however, thus limiting the chance to employ needed people.

Federal action in the health and medical fields was very limited. The controversial bills on medical education and governmental insurance did not progress, nor was any action taken on the aid to Local Health Services Bill.

The Association received as information this portion of the Board's report.

REPORT WITH REGARD TO FEDERAL AGENCIES

Federal appropriations for health activities are made under numerous categorical headings and vary from year to year. In general there has been a tendency to reduce appropriations for venereal disease activities and for the other long established programs and to increase the amounts available for new efforts such as heart disease and mental health. Malaria control and typhus fever control funds were sharply reduced in line with the reduction in these diseases. For the same reason T. V. A. has been gradually withdrawing its financial support from the valley counties.

Relationships have remained as always on a cordial basis and decisions as to execution of programs were a state responsibility.

This comment was also received as information.

AMERICAN MEDICAL EDUCATION FOUNDATION

The campaign of the American Medical Association to raise funds for the medical schools of the country has been in force for the past two years. An augmented drive for funds is being carried out this year and every physician is being urged to contribute. Contributions may be earmarked for any particular school desired and will reach that institution.

The Board heartily recommends to the individual members of the Association this Foundation and urges that as many as possible contribute.

The recommendation of the Board was adopted.

INTERN TRAINING IN ALABAMA HOSPITALS

Too many of our medical graduates are forced to go outside of Alabama for intern training, with the result that the brightest and most proficient are offered positions or associations which keep them from ever returning to their native state, thus robbing Alabama of much needed doctors.

To prevent this loss of talented personnel in our profession of the state there began about two years ago a movement by certain hospitals, the Medical College of Alabama, and interested members of the profession to do something about it. During the past two years visits and consultations to and from certain hospitals, the Medical College, and those from the Council on Medical Education and Hospitals of the American Medical Association have developed that it is possible to organize hospitals and their staffs, with the cooperation of the Medical College, whereby hospitals of 100 beds or over may become affiliated in a plan to be recognized for intern training.

The Board recommends that the Association commend those who are working out this plan and should endorse this movement.

The recommendation was adopted.

PROGRAM ADVERTISING ON LOCAL LEVEL

The Board has received a request for an opinion as to whether it is ethical for doctors to take advertising space in programs of various schools and civic groups or church activities, inserting their names. The Board recommends that it would be better for such advertising space to be taken in the name of the County Medical Society with no names inserted, or if the space is paid for by an individual no name be inserted in the program but the phrase, "A Friend," be used instead.

The Association concurred in this expression of the Board.

RESOLUTION ON STATUTE OF LIMITATION

Introduced by Dr. Garber

"WHEREAS, The statute of limitation in Alabama applicable to actions for negligence is one year; and

"WHEREAS, Actions for medical malpractice are, in essence, actions for negligence; and

"WHEREAS, The Supreme Court of Alabama, contrary to the decisions in most of the states in the United States, has held that an action for malpractice may be commenced against a physician within six years after the act of neglect, upon the theory that malpractice constitutes a breach of contract; and

"WHEREAS, Many states in the United States have enacted laws providing specially for the time within which an action may be brought for malpractice, many of them providing only one year, many others two years, and a few three years; and

"WHEREAS, After the lapse of two years from and after an alleged act of malpractice, many witnesses may be gone, memories faded, and records lost or mislaid; therefore be it

"Resolved, By the Medical Association of the State of Alabama, that the Legislature of Alabama be, and it hereby is petitioned to cause to be enacted a law providing that an action of malpractice must be commenced within two years after the time of the act of malpractice, and not afterwards."

Last year this Association adopted a resolution urging that the laws of the state be changed to bring the statute of limitation in medical practice suits in line with that set up for damage suit cases. The last Legislature failed to enact this change. It is therefore recommended that the President of the Association appoint a committee to draft the necessary legislation and sponsor its introduction in the 1953 Legislature.

The Board so recommends.

The Board's recommendation was adopted.

RESOLUTION FROM THE MORGAN COUNTY MEDICAL SOCIETY

"WHEREAS, Some of the newspapers in Alabama have been highly critical of the management and treatment of patients in the Alabama Hospitals for the Insane, which include the Bryce Hospital for white patients, at Tuscaloosa, Alabama; the Partlow State School, a school and home for the mentally defective children at Tuscaloosa, Alabama, and the Searcy Hospital at Mt. Vernon, Alabama, for the colored insane; and

"WHEREAS, The uninformed public has been led to believe through these newspaper stories that electric shock therapy is being used at these hospitals for punishment of inmates rather than treatment of the mentally ill patients; and

"WHEREAS, The medical profession does recognize and agree that many patients with certain types of insanity have been greatly helped, and

possibly cured by electric shock therapy when used as treatment; and,

"WHEREAS, The managers of all of these state hospitals are members of the medical profession, and unjust criticism directed at them for the use of electric shock therapy in their treatment of patients is a reflection on the entire medical profession of the state of Alabama; and,

"WHEREAS, It is the opinion of the Board of Censors of the Morgan County Medical Society that an impartial investigation should be made of these state institutions by a committee composed of members of the State Medical Association, for the purpose of ascertaining the true facts and conditions at these institutions; therefore be it

"Resolved, By the Board of Censors of the Morgan County Medical Society that the Morgan County Medical Society be requested to adopt this resolution and that it be sent to the Secretary of the State Medical Association with the request that he put it in proper channels for introduction to the State Medical Association meeting to be held in Montgomery April 17, 18 and 19 of this year. It is requested that the State Medical Association appoint a committee of five members to make a thorough investigation of the state institutions for the mentally ill, particularly, in reference to the use of electric shock therapy and report its findings back to the Association with such recommendations it may care to make; and be it further

"Resolved, That the question of the scope of investigation, the expense of the members of the committee, and the time of making its report be left up to the State Medical Association; and be it further

"Resolved, That a copy of the report and recommendations made by the committee from the State Medical Association be furnished the Governor of Alabama; the President Pro tem. of the State Senate, and the Speaker of the House of Representatives."

It is the information of the Board that the final report of the Legislative Committee, investigating the Insane Hospitals of Alabama, has not been completed or made. This fact and the fact that these are state institutions, which do not come under the jurisdiction of the Medical Association of the State of Alabama, the Board recommends that no action be taken at the present time.

The Association agreed with the Board in its expression regarding this matter.

BLUE CROSS-BLUE SHIELD

The term of office of two representatives of the Association to the Board of Trustees of Blue Cross-Blue Shield will expire December 31, 1952. The Board recommends that Dr. C. A. Grote, Huntsville, and Dr. B. W. McNease, Fayette, be appointed for a term of three years beginning January 1, 1953.

The Board's recommendation was adopted.

ADVISORY COUNCIL FOR PRACTICAL NURSES

The term of office of the representative of this Association on the Advisory Council to confer with the State Board of Nurses' Examiners and Registration on matters pertaining to practical nurses having expired, the Board recommends that Dr. E. G. Moore, Tallassee, be appointed for a term expiring Sept. 4, 1955; and that Dr. Robert Parker, Montgomery, succeed Dr. John W. Simpson, Birmingham, representing the Board of Censors, his term to expire Sept. 4, 1954, these nominations to be submitted to the Governor for his approval.

This recommendation complies with the provisions of Title 46, Section 189(22) as it appears in the 1951 Cumulative Pocket Part of the 1940 Code of Alabama.

The Association accepted the recommendation of the Board.

ELECTION OF STATE HEALTH OFFICER

Section 6 of Article XIII of the Constitution of The Medical Association of the State of Alabama, as amended, reads as follows:

"The Board shall elect by not less than a majority vote of its members, an executive officer to be known as State Health Officer, and shall submit the name of the officer so elected to the Association (the State Board of Health) in annual session, for confirmation."

In compliance with this constitutional provision, the Board has pleasure in reporting to the Association that it has unanimously elected Dr. D. G. Gill, Montgomery, Alabama, as State Health Officer for a period of five years, and now submits this action of the Board to this Association for confirmation.

The Board's election of Dr. D. G. Gill as State Health Officer for a term of five years beginning April 19, 1952 was confirmed by the Association.

Part I of the Board's report was approved as a whole.

PART II

REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

In this field of its activities the Board submits the following statistical report for 1951:

Certificates of qualification granted	101
(a) Physicians passing examinations June 26-28, 1951	62
(1) Certificates issued	9
(2) To be issued after internships	53
(b) Physicians failing	2
(c) Certificates granted applicants completing internships July 1, 1951	33
(d) Physicians granted reciprocity	47
(e) Diplomates of the National Board of Medical Examiners licensed	12

- (f) Physicians granted privilege to re-register for narcotic stamp 2
- (g) Chiropody renewal licenses issued 36

CERTIFICATES OF QUALIFICATION GRANTED
JUNE 1951 APPLICANTS

Bernhard, Charles B., Jr.	Mason, Lawrence E.
Chapman, Dan W.	Nelson, John Hall
De Simone, John S.	Parish, Claude E.
Goodwin, Paul	Viar, William N.
	Walker, Robert H.

CERTIFICATES TO BE ISSUED AFTER ONE YEAR OF
SATISFACTORY INTERNSHIP

Abele, Henry B.	Lusk, John A., III
Balthrop, John E., Jr.	McCarley, John T., Jr.
Blakeney, William H.	Meigs, Lamar C.
Byrd, Ben Ralph	Miller, John C.
Caffey, Benjamin F., Jr.	Montgomery, R. A., Jr.
Caldwell, Harry E.	Moore, John M.
Callahan, James S., Jr.	Moore, John T., Jr.
Campbell, David A.	Moughon, W. S., Jr.
Carpenter, B. S., Jr.	Muir, Ian W.
Carter, Thomas E., Jr.	Myer, Edward M.
Castleberry, Jesse W.	Nolen, Mary F. M.
Chenault, Sidney B.	Nolen, Thirwell M.
Coggan, George M.	Nuckols, Frank J.
Collins, Douglas	Osment, Lamar S.
Cooner, William H.	Pinkerton, Haskell A.
Copeland, Albert B.	Robertson, W. H.
Draughon, Robert L., Jr.	Saunders, John C.
Duff, Roland D.	Sherrod, Joseph A., Jr.
Haden, Robert H.	Strond, Quentin R.
Harris, Richard A.	Terrell, Clyde
Hicks, John H.	Wade, John F.
Hogan, Robert S.	Webb, John W., Jr.
Hyde, Mattie I.	Whately, George B.
Johnson, Leslie M.	Whitehead, John S.
Jaudon, George R.	Whitley, Milton E.
Lombardo, Thomas A.	Wise, Robert H.
	Young, Roy G., Jr.

CERTIFICATES GRANTED APPLICANTS COMPLETING
INTERNSHIPS JULY 1, 1951

Agricola, Frederick T., Jr.	Katz, Harry M.
Alison, James F., Jr.	Kent, John E.
Allison, Mack E., Jr.	Ledbetter, Edith G. J.
Bade, Craig P.	Ledbetter, John R., Jr.
Barnett, Robert V.	Maticka, Jack B.
Blakney, Emerson W.	McLaughlin, Leon D.
Bliss, Richard F.	Perdue, Mervin W.
Burnett, Robert E., Jr.	Pouncey, Wyatt B.
Burnum, John F.	Romine, William O.
Clayton, Jackson B.	Ryle, Winfred E.
Cowden, Robert W.	Simpson, Harry M., Jr.
Dahlene, Oscar, Jr.	Sturgis, Doris Jean
Erwin, Claude C.	Thomas, James B.
Funderburg, Lonnie W.	Vance, Scott
Haas, Albert C.	Wilcoxson, Rhoda C.
Hoyt, Millard L.	Wingo, Douglass H.
	Wright, William Haig

RECIPROCITY APPLICANTS RECEIVED DURING THE
CALENDAR YEAR OF 1951

Anderson, James B., Jr.—Neb.	Oct. 8, '51
Andrew, Samuel E.—Tenn.	June 15, '51
Anlage, Henry J.—Mo.	Dec. 14, '51

Askew, William A.—Ga.	May 21, '51
Bankston, Ingram W.—Ga.	June 12, '51
Baxter, Earle G.—Ohio	Dec. 26, '51
Beale, George L.—Ga.	June 1, '51
Bing, Richard J.—N. B. M. E.	Oct. 17, '51
Bolin, Richard R.—Minn.	June 22, '51
Boyer, Harold L.—Okla.	Aug. 10, '51
Brower, Walter J.—N. B. M. E.	Mar. 5, '51
Brown, Edward E., Jr.—Ga.	Dec. 14, '51
Bruce, James F.—N. B. M. E.	Aug. 23, '51
Caldwell, John D.—Tenn.	Mar. 26, '51
Dale, William A.—Tenn.	Oct. 22, '51
Etheridge, William N.—Ga.	May 28, '51
Fey, Charles W.—Ohio	Feb. 12, '51
Foster, Henry A.—Ga.	Jan. 8, '51
Freeze, James M.—Tenn.	Dec. 14, '51
Giles, Julian W.—Mo.	Dec. 14, '51
Graves, Sidney O., Jr.—Miss.	Oct. 1, '51
Greenfield, William R., Jr.—Tenn.	June 15, '51
Hanford, John R.—Mich.	Oct. 22, '51
Harris, Leo Clay, Jr.—Tenn.	July 30, '51
Harrison, James H.—La.	July 16, '51
Hastings, Frank W.—N. B. M. E.	July 31, '51
Hawthorne, Roy O.—Ill.	Dec. 7, '51
Head, Thomas D.—N. B. M. E.	Sept. 12, '51
Hulett, Alexander W.—Miss.	June 12, '51
Jones, Henry P.—S. C.	Aug. 13, '51
Little, William F., Jr.—La.	June 22, '51
Lund, Douglas W.—Va.	Aug. 13, '51
Mann, Bernard F., Jr.—N. B. M. E.	Feb. 20, '51
Marshall, Clyde B.—Tenn.	Jan. 2, '51
Marshall, Samuel P.—Va.	Aug. 10, '51
Mason, Robert H.—Ill.	Dec. 26, '51
McDonald, Homer J.—W. Va.	July 30, '51
Morgan, James C., Jr.—Ga.	July 9, '51
Nettles, James D.—N. B. M. E.	July 30, '51
Nichols, William H., Jr.—Ga.	July 9, '51
Norton, Robert O., Jr.—La.	Nov. 26, '51
Palmer, Glenn F.—W. Va.	Dec. 12, '51
Phillips, Carey W., Jr.—Miss.	Jan. 19, '51
Ramage, Raymond C.—N. B. M. E.	Sept. 14, '51
Robbins, John H.—N. Y.	Aug. 27, '51
Sammons, Robert A.—Tenn.	Apr. 16, '51
Stanton, Roy F., Jr.—Ill.	May 14, '51
Taylor, Viston, Jr.—Tenn.	Jan. 22, '51
Teal, Charles B., Jr.—N. B. M. E.	July 24, '51
Thagard, Roy Frank—Tenn.	Aug. 20, '51
Till, Harry J.—N. B. M. E.	June 22, '51
Thuss, William G., Jr.—N. B. M. E.	Feb. 23, '51
Tootle, George S.—Ga.	June 22, '51
Touchy, Armant C.—La.	Aug. 27, '51
Vesely, David G.—Tenn.	Aug. 10, '51
Wallace, Clifton R.—D. C.	June 21, '51
Wallace, Sidney L., Jr.—Tenn.	Jan. 8, '51
Wool, Jack—N. B. M. E.	Dec. 7, '51
Zinker, Leonard L.—La.	July 30, '51

CHIROPODY RENEWAL LICENSES ISSUED FOR 1952

Alexander, Isadore H.	Birmingham
AuCoin, William J.	Mobile 12
Austin, Elizabeth Sealy	Montgomery 4
Benitez, George W.	Birmingham 3
Blotzer, Ellen L.	Mobile 10
Blotzer, John S.	Mobile 10
Carter, Harry S.	Florence
Clark, George E.	Birmingham 3
Coleman, Jasper C.	Dothan
Cooper, John M.	Birmingham 3

Crowley, Coy H.	Mobile 13
Crowley, Gentry B.	Huntsville
Davis, Edith M.	Birmingham 3
DeViso, Viola	Anniston
Dixon, Mildred K.	Tuskegee Inst.
Draper, William L.	Birmingham 3
Edwards, Charles M.	Birmingham 3
LeCroy, Thomas H.	Sylacauga
Leighty, Fred G.	Birmingham
Lewis, Martin	Florence
Miller, John	Mobile
Oxford, Herman R. A.	Tuscaloosa
Pearson, Joe P.	Birmingham
Peterson, Bessie C.	Birmingham 3
Plevine, Erich H.	Gadsden
Rae, Hugh	LaGrange, Ill.
Riccio, Peter D.	Bridgeport, Conn.
Rollings, Harry H.	Montgomery 4
Sealy, Ariel Lewis	Safford
Sealy, Edward E.	Montgomery 4
Shellington, Lloyd R.	Cleveland, O.
Silverman, Isidor	Birmingham 3
White, Juddie B.	Birmingham 3
Wittick, Arthur, Jr.	Philadelphia, Pa.
Wright, Thomas L.	Selma
Young, Frank N.	Cleveland 3, Ohio

Part II of the Board's report was adopted as a whole.

PART III

REPORT OF THE BOARD OF CENSORS AS A STATE COMMITTEE OF PUBLIC HEALTH

D. G. Gill, M. D.
State Health Officer

PREFACE

Annually the parent organization, the State Board of Health, receives a report as to the progress made by its legal offspring, the official health agencies. The report for the past year is again a good one. Some unfavorable items are of course noted but the people of the state as a rule enjoyed a year of good health in so far as this can be measured by high birth rates, low death rates and the absence of serious epidemics. Births reached a level exceeded only by the record breaking year of 1947, there being 82,615 births according to provisional figures. Deaths numbered 27,076 or a rate of 8.7 per 1,000 population. Increase in this rate must be expected in future years.

Poliomyelitis paid one of its periodic visits to the state and resulted in nearly 700 recognized cases, with 41 fatalities. Epidemic years in Alabama have been 1936, 1941, 1946 and now 1951. The significance of this five-year interval has not been determined. Other communicable diseases were at low levels, although progress still needs to be made. Twenty-five deaths from diphtheria is too high a price to pay for failure to immunize. Tuberculosis set another new low record, but at the present rate of decrease will be with us for a long time to come. Malaria, except for Korean veterans, was almost extinct. Cancer failed to increase for the first time in

several years but whether this is a temporary relapse or not will have to be determined later.

Maternal and neonatal death rates set new low records—a tribute to the profession for their efforts in this field. The leadership displayed by the members of this Association has been outstanding.

ADMINISTRATION

NEW HOSPITALS COMPLETED

Eleven hundred thirty-six (1136) beds were added to Alabama's public, non-profit and private hospitals during 1951.

Of this number, 865 were added by the completion of sixteen hospital and allied facilities under the Hill-Burton program. Of this total the general hospital beds were divided as follows: St. Jude's Hospital, Montgomery, 152; DeKalb County, Ft. Payne, 55; Marion County, Hamilton, 37; Perry County, Marion, 21; Dale County, Ozark, 50; Bullock County, Union Springs, 29. Two combination general hospitals and public health centers were completed: Athens-Limestone, Athens, with 64 general hospital beds; and Clay County, Ashland, with 20.

The Crippled Children's Clinic, Birmingham, added 128 beds for orthopedic service. Beds for mental patients were increased by 125 with the completion of a building at Bryce Hospital, Tuscaloosa; and 184 beds for tuberculosis patients were added with the opening of the District I Tuberculosis Sanatorium, Decatur.

The other facilities completed during the year were: three county health centers (Etowah at Gadsden, Cullman at Cullman, and Sumter at Livingston); one school of nursing at Sylacauga Hospital, Sylacauga; and the Dental Clinic wing of the University of Alabama College of Medicine and School of Dentistry at Birmingham.

A net gain of 271 beds was made through the hospital licensure program. During its second year the number of licensed institutions increased to 226, 156 of these being hospitals, 48 nursing homes, 20 clinic-hospitals, and two maternity homes. At the end of the year only 29 of these facilities had qualified for regular licenses. At the end of 1951 93 had been issued regular licenses and 98 had work underway or planned to bring their facilities up to standard.

Because of the reduction of the Federal appropriation, the end of the year saw only nine hospitals and one health center under construction, with only four more scheduled to begin construction before the next Federal fiscal year. Applications were on file for Hill-Burton aid in constructing 40 general hospitals totaling 1,615 beds; 16 public health centers; five nurses' homes and schools of nursing; and three tuberculosis sanatoria, with a total of 458 beds.

One of the most interesting studies made by this Division of Hospital Planning during the past year related to Alabama hospitals and the civil defense program. The study inventoried the existing hospitals, and the probable effect of enemy action upon them. It also made recom-

mendations for the location of emergency and evacuation hospitals. The Director of the Division made a report of this study at the meeting of the regional directors of the Hill-Burton program at Biloxi in March 1951. Copies of the report were requested by other states to serve as a guide in the preparation of similar reports.

In conjunction with this study, a plan was developed for health and medical services under disaster conditions.

MENTAL HYGIENE

The Division of Mental Hygiene expanded its services during the year both in clinical and in educational areas. The "clinical" services which were in existence in 1950 were continued into 1951. In addition, two interesting combinations of the two areas were begun. Under the sponsorship of the Tuskegee Mental Health Society, with some assistance from the Division, and with volunteer assistance of local psychiatrists and others, a Tuskegee Mental Hygiene Clinic was opened. The interest aroused by the single full-time worker has resulted in one of the most consistent and best planned educational programs in the state. Under the sponsorship of the Mobile County Health Officer, and with the cooperation of local agencies and service organizations, a mental health program was added to the other public health programs in Mobile. Although there is a clinic service available, its function is primarily educational in the interest of prevention.

In the area of education alone, work was begun in prenatal classes and postpartum education. This is relatively limited in scope at the present time, but expansion with the assistance of the U. S. Public Health Service is contemplated. A rather broad program in family life education was added to the services of the Division. This program operates in conjunction with the University Extension Division and with the parent education programs of local Parent-Teacher Associations. In cooperation with the Birmingham Industrial Health Council, the Division sponsored a Mental Health-In-Industry Workshop, which was followed by research into mental health problems in industry. The Division also began work in the field of Pastoral Counseling, bringing psychologic techniques to ministers.

The Division's Film Library was expanded to forty mental health films which have become so popular that, on an average, seven films per day were in use.

PUBLIC HEALTH EDUCATION

In general, the work of this Division in 1951 was essentially a continuation and extension of its activities of the previous year. As in the past, its program was motivated by a desire to reach as many Alabamians as possible with worth-while health information.

The two Montgomery daily papers published 425 news and feature stories based upon releases prepared and issued by this Division. It was not possible to obtain any information as to the

number of such articles appearing in the other daily papers of the state. However, such information as is at hand indicates that the information contained in these releases was carried by the daily and weekly press in a steady stream to readers all over Alabama. As in past years, copies of most of the releases were made available simultaneously to the two Montgomery dailies, the principal news services, and the five Montgomery radio stations. Also, as in the past, a special release was issued every week in mimeographed form directly to the state's weekly papers and to the dailies outside Montgomery. The weekly State Health Chat went to the Associated Press, as before.

The weekly radio health talks, formerly heard by means of electrical transcriptions, were changed to tape recordings exclusively in the spring. This saves a considerable amount in shipping charges and greatly reduces the work involved on the part of station personnel in forwarding the talks from station to station. Fifteen stations were using the talks at the end of the year. The use of a single talk by a number of stations naturally multiplies the total audience reached. It is planned to continue the adding of new stations in 1952.

As in the past, these weekly radio talks were mimeographed and received wide distribution as health education material. In addition to the copies sent routinely to health officials and others in this and other states, copies were kept on file to supply requests for information on the subjects covered. To make this material readily available in meeting such requests, the talks are indexed by subjects. They of course provide information not available anywhere else. Written primarily with Alabama audiences in view, they deal with health problems particularly affecting this state. They also deal with broad health problems as those problems particularly affect Alabama.

Several new prints were added to the Film Library, most of which were furnished on indefinite loan by the U. S. Public Health Service. Sixty-four county health departments were members. Naturally, some were more frequent borrowers than others. Film booking orders filled during the year totaled 630. A change was made during the year in the method by which county health departments pay the transportation charges on films borrowed. Previously, films were shipped either by express collect or by parcel post C. O. D. for charges. As the C. O. D. fee itself amounted to a considerable sum, in some instances actually exceeding the parcel post charge, the cost of shipping films by parcel post under that arrangement was not substantially under the express charge. To reduce the cost of borrowing films as much as possible, an arrangement was worked out whereby county health departments agreed to pay accumulated parcel post charges upon periodic presentation of bills. Each county health officer wishing to avail himself of this arrangement was invited to sign the necessary agreement. Most did so immediately, and they began receiv-

ing their films by ordinary parcel post. Some, however, have preferred to continue to receive films by express collect or by parcel post sent C. O. D. for postage.

Other activities were carried on about as in the past. Booklets and other health education material were distributed. Editing of the Department's annual report was a Division responsibility. Books were reviewed for the Journal of the Medical Association of the State of Alabama. Considerable information was furnished by correspondence. The Division cooperated with other official and unofficial agencies seeking to lift Alabama's health knowledge levels.

The Division is grateful for the excellent and friendly cooperation it has received from the newspapers, radio stations, officials, and private citizens. It has been most helpful.

MACHINE TABULATION

Acting in the capacity of a service unit, the Division of Machine Tabulation processed during 1951 work for various bureaus and divisions of the Department.

For the Bureau of Preventable Diseases indexes and statistical tables were prepared for the multi-phase screening program. Morbidity statistics on communicable diseases for the annual report were also prepared.

Indexes and statistics on currently reported birth, death and marriage certificates were prepared for the Bureau of Vital Statistics.

A summary of the activities of the county health departments was prepared for the Bureau of County Health Work.

Miscellaneous reports were prepared for the Bureaus of Sanitation and Laboratories and the Division of Finance.

COUNTY HEALTH WORK

The close of the year 1951 found all of the counties of the state provided with at least a skeleton organization operating on a full-time basis. Twenty-five counties had individual health officers, twelve health officers were serving twenty-four counties, sixteen counties were receiving administrative direction from local practicing physicians, and two presented vacancies in the health officership, either full-time or acting. It cannot be predicted when there will be sufficient medical manpower to meet all needs in county health work. It is true there were accessions during the year but they were replacements, with the result that the end of the year found the situation essentially like it was at the beginning. Despite scarcity of personnel, programs have been pursued effectively.

Communicable Disease Control

Admissions to service	2090
Consultations with physicians	1729
Field visits	6496
Smallpox vaccinations	48887
Diphtheria immunizations	34005

Typhoid fever immunizations	242164
Pertussis immunizations	7534
Triple vaccine	41671

Venereal Disease Control

Admissions to service	11342
Clinic visits	29979
Field visits	9550
Number of treatments given	12850

Tuberculosis Control

Individuals admitted to service	20769
Clinic visits	55722
Field visits	44998

Maternity Service

Cases admitted to antepartum service	24094
Visits by antepartum cases to medical conferences	53827
Nursing visits—antepartum	18822
Cases admitted to postpartum service	14470
Clinic visits—postpartum	5760
Postpartum field visits	22768

Infant Hygiene

Individuals admitted to service	32574
Visits to medical conferences	31968
Nursing visits	54148
Neonatal death investigations	148

Preschool Hygiene

Individuals admitted to service	23174
Visits to medical conferences	24181
Nursing visits	28794

School Hygiene

Inspections by physicians and nurses	103876
Examinations by physicians	22703
Individuals admitted to nursing service	3738
Nursing visits	11147

Adult Hygiene

Medical examinations	7276
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Morbidity Service

Cases admitted to service	3964
Office and clinic visits	4725
Field visits	4811

Cancer Control

Individuals receiving diagnostic service	915
Individuals receiving treatment service	1361
Individuals admitted to nursing service	208
Field visits	653

Dental Correction Service

Individuals admitted to service	18052
Office and clinic visits	28929
Inspections by dentists and dental hygienists	18249
Prophylactic treatments given	25665

General Sanitation

Approved individual water supplies installed	632
Approved excreta disposal systems installed	10363
Field visits	86340

Protection of Food and Milk

Food-handling establishments registered for supervision	17999
Field visits to food-handling establishments	87768
Dairy farms registered for supervision	2671
Field visits to dairy farms	24042
Milk plants registered for supervision	380
Field visits to milk plants	7013

Special Control Services

Impounded water projects registered for supervision	4180
Field visits to impounded waters	5502
Premises dusted for typhus control	34750
Field visits in typhus control	31976

Laboratory

Specimens examined	405749
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PUBLIC HEALTH NURSING

The personnel of the Division of Public Health Nursing consisted of the director, two general consultant nurses and a clerk-stenographer. There were in the entire state 197 staff nurses and 20 supervisors as of December 31, 1951, which were 15 fewer staff nurses than on January 1, 1951. These figures include all counties, Boards of Education, and non-official agencies employing public health nurses. Any figures quoted hereafter in this report will apply to 66 counties only, Jefferson County and other agencies being excluded.

The nursing staff during 1951 was very unstable. There were twenty-six new appointments and twenty-six resignations among the county nurses, almost half of those resigning going to better-paying positions. Of the twenty-six new appointments, five resigned before the year was out, their length of service ranging from five days to six months. There were two transfers. Ten nurses were granted sick and maternity leave, to the total of forty-seven months.

One county, Crenshaw, was without a nurse the entire year, and several others were not covered with nursing services for varying periods.

All these changes and absences caused a noticeable drop in the number of home visits made. Because of a lack of adequate supervision, the county nurses could not plan their activities to best advantage.

On the positive side, there was one general nurse consultant added to the central staff and one director of nurses added to Mobile County, but this leaves a lot to be desired in the matter of the number of supervisors.

A total of 162 visits were made by the three members of the supervisory staff to sixty-three counties. These visits lasted from less than one day to five days each.

Arrangements were made with the Lee County Health Department to use its personnel and facilities for short orientation or refresher courses.

These were for two week periods and proved invaluable. Forty-five nurses had this advantage.

Through one of the faculty members at the Medical College of Alabama, twenty-two nurses were taught to use audiometers.

The nursing manual was completely revised and distributed personally to the nurses, who met in small groups for a thorough discussion of the revisions.

Two public health nurses, along with three other nurses, attended the Institute on Nursing in Atomic Warfare, held in Atlanta. These nurses then inaugurated second-level institutes in six sections of the state, with an attendance of around 200 nurses, who in turn conducted classes for other nurses throughout Alabama.

In cooperation with the National Foundation for Infantile Paralysis, a three-day institute was held.

Although there were many requests for scholarships, and the staff needs better preparation, only four public health nurses were sent to school. The combined time of these scholarships amounted to less than one calendar year.

The usual talks were made to clubs, and the nurses of this Division served on various committees having to do with recruitment and education of nurses.

MERIT SYSTEM

During 1951 the Merit System for County Health Work conducted competitive examinations on an open-continuous basis for the following classes: Clerk I and Clerk II, Typist I, II and III, Sanitation Officer I, II and III, Scientific Aide, Sanitation Assistant, Meat and/or Milk Inspector, Graduate Registered Nurse I and II, Public Health Nurse I and II and County Health Officer I and III. Examinations for several other classes were open, but no applications were received. The applications received for these examinations totaled 359, of which 333 were acceptable, and 207 applicants appeared for the examinations. From this number 187 made passing grades, 20 failed, and 187 names were placed on eligible registers. There were 77 appointments made from these registers, which number included many provisional employees who received permanent status as a result of the examinations. Twenty-two appointments were made from eligible lists established previously.

In addition to appointments from eligible lists, 42 positions were filled on a provisional or temporary basis. There were 119 separations from service, which included 70 resignations, six dismissals, three lay-offs, 36 expirations of provisional and temporary appointments and four deaths.

A new class of Sanitation Officer IV was adopted.

Rule IX, Section 4(d) of the Rules and Regulations for the Merit System for County Health Work was amended to provide military leave for county employees that would conform with that allowed employees in state service.

The Merit System Council approved revised salary ranges for the classes of Scientific Aide, Sanitation Assistant, Graduate Registered Nurse I and II, Public Health Nurse I, Sanitation Officer I, II and III, Public Health Engineer and Meat and/or Milk Inspector.

There were seven employees who went on military leave during the year. This does not signify unusual hardship due to the national emergency.

MATERNAL AND CHILD HEALTH

The aim during the year was to establish a maternity clinic in every county. This goal was almost reached during 1951. Beginning with the fiscal year 1952, the funds allotted to the Bureau of Maternal and Child Health were reduced. Therefore, clinics (maternity, well-baby and dental) in the various counties had to be reduced 50% in order to stay within the budget. It is hoped that all of these clinics can be revived when additional money is available.

During 1951 this Bureau sent booklets, supplies and equipment to 65 of the 67 county health departments and also to the Medical College of Alabama, in Birmingham.

In 1951 there were 110 prenatal clinics in 57 counties, as compared with 105 in 47 counties in 1950; there were 145 physicians devoting part-time to conducting maternity clinics for the indigent and medically indigent in the majority of the counties of the state; and there were 54 well-baby clinics conducted in 29 counties, a gain over 1950 of eight clinics and three counties.

One doctor each from Autauga, Cherokee, Colbert, DeKalb, Franklin, Lee and Talladega counties attended the short course in maternity care in Birmingham at the Health Center Building on February 15 and 16.

A short refresher course in connection with the hard-of-hearing program was conducted at the Medical College of Alabama. Three or four nurses attended each class and remained for several days. Nurses from twenty-one different counties attended during the year.

For the above two courses, the State Department of Health paid the mileage and per diem of those in attendance.

Scholarships were provided for two Negro physicians to attend the postgraduate course in pediatrics, obstetrics, and gynecology at Meharry Medical College from July 23 to July 27, inclusive, and for ten physicians to attend the Southern Pediatric Seminar from July 16 through July 28, and the Obstetrical Week from July 30 through August 4, both at Saluda, North Carolina.

Seven third-year medical students were employed for approximately three months during the summer of 1951 in Jefferson, Mobile, Montgomery and Sumter counties with an idea of impressing them with the importance of the public health program.

The State Department of Health wishes to pay its respects to the State Medical Association's

Committee on Maternal and Child Health, comprised of Drs. T. M. Boulware, A. E. Thomas and Hughes Kennedy, for its interest in the program of the Bureau.

The Committee's report on its five-year study of maternal mortality in Alabama 1944-1948 was published and distributed by the Department. During the coming year, the Committee and the Department will sponsor and conduct a case study of each maternal death occurring in the state. This should prove very helpful.

In 1951, there were 52 dental clinics in thirty-eight counties. Approximately 21,927 patients were admitted.

Ninety-seven local practicing dentists participated in the dental care program during the year. They were employed on a part-time basis and devoted 10,094 hours to this work. They completed dental care for 5,815 patients.

The Topical Sodium Fluoride Demonstration Team was assigned to eight counties during the year and treated 5,850 children. The personnel of the team was reduced to one dental hygienist. The response to this demonstration in each county visited was good.

The Bureau of Maternal and Child Health did these things in 1951 in its effort to improve the health of specific groups, individuals and families in Alabama:

Provided nutritional educational materials to nurses, teachers, students, school lunch managers and other interested individuals.

Gave conferences and demonstrations at clinics in an attempt to prevent and control dietary deficiencies among stress groups, especially expectant mothers and growing children.

Participated in workshops for school lunch managers in counties and at the University of Alabama.

Through personal visits to schools, gave assistance in improving the type of meals served and made suggestions relative to better use of abundant foods and the use of fresh fruits and vegetables produced locally.

Participated in in-service training program for county nurses.

Through home visits with the nurses, gave help to low-income families on spending their food money to the best advantage. It is recognized that low income is only one factor involved among people who are not adequately fed.

Made talks to adult groups stressing the important place good food has in terms of good health. Also emphasized the penalty of consuming too much or too little food.

Prepared leaflets for specific and general distribution and made them available to the nurses and other interested individuals. Nurses were provided with nutrition information or materials for their use.

We believe greater progress in Alabama will

come when all the people in the state realize the relationship between the kind and amount of food they eat and the state of their health and their ability to work. To reach every citizen in every community in the state with sound, understandable, and practical nutrition facts is a big job, one that will require the united efforts of all state and county agencies whose interest parallels that of the public health agencies in an over-all nutrition program devoted to the task of improving the health and economic level of individuals and family groups. Progress towards this end has been made, but there is much yet to do.

LABORATORIES SHOW INCREASE

The number of specimens examined during 1951 by the Bureau of Laboratories showed an increase of about 1,000 over the previous year; 535,000 being done in 1950, as compared with 536,000 in 1951. Several of the laboratories showed a small decrease in the number of specimens examined as compared to the previous year. Water and milk specimens showed a slight increase over the previous year.

Biologicals were distributed as in previous years, but the introduction of the triple antigen, consisting of diphtheria toxoid, tetanus toxoid and pertussis vaccine, has caused a very sharp decrease in the amount of diphtheria toxoid distributed, which is in line with the trend as noted the year before. The distribution of sterile distilled water was discontinued.

Nineteen private laboratories were given permission to perform premarital blood tests, and the method of sending out check specimens to these laboratories was amended and modified so that all participating laboratories will receive 200 check specimens over a period of ten months each year. Several private laboratories were found to be very low on this extensive checking program but were assisted by the Serology Division to bring up their level of performance so that now all are doing equally well.

Approximately 3,000 blood smears were tested for malaria from the area around Demopolis with no positives being reported.

The Tuberculosis Laboratory was enlarged and has had marked increase in the amount of work, all specimens being cultured as well as direct smears being made. Some 15 counties were invited to participate in a hookworm survey so that a new base line could be estimated for future reference. This program was begun in November. Nearly every other division has been working on newer procedures which will be adapted if found to be useful for the type of work in which the Laboratory is engaged.

GENERAL SANITATION

During 1951 there were approved by the county sanitation officers, and reported upon to the Bureau of Sanitation, 1,445 pit privies, 7,461 septic tanks and 5,363 sewer connections, or a total of 14,269 new units of sanitation. This sanitation served 69,617 people of the state. A total of

769 sanitation units, serving a population of 8,449, were restored to former usefulness and protection to the public health. It is thus seen that 78,066 people were benefited by the 15,038 new and restored installations.

In comparison with work in the previous year, it is noted that 4,084 less units were constructed and restored, representing a decrease of approximately 20%. The county sanitation officers should derive great satisfaction from their accomplishments. They should, however, appraise their work to determine means of increasing their accomplishments and rededicate their efforts in the suburban and rural areas.

MALARIA CONTROL

The two engineers assigned to the Malaria Control Division are responsible for the enforcement of the state's Impounded Water Regulations and the planning, promotion and direction of a state-wide program for controlling the breeding of the malaria-transmitting *Anopheles quadrimaculatus* mosquito, pest mosquitoes, flies and other household pests. This includes programs connected with:

1. Impounded Water

- a. Major impounded water projects
- b. Minor impounded water projects

2. State Health Department and U. S. Public Health Service cooperative program.

3. Miscellaneous malaria and insect control operations.

Major impounded water projects are those having a surface area greater than 100 acres; and minor impounded water projects are those having less than 100 acres in surface area.

There are 26 major impoundages in the state, ranging in surface area from 400 to 67,000 acres. Pre-impoundment surveys were made during the year on two additional impoundages, ranging in size from 10,000 to 70,000 acres. At the end of the year there were under construction two other large lakes which are owned by the U. S. Engineers. Conferences have been held with this agency during the year and plans laid for clearing operations before impounding. Two inspections have been made of the Big Creek Reservoir, owned by the city of Mobile, now under construction, for ascertaining compliance with the regulations during clearing operations. The lake will flood about 4,000 acres. This lake was about 85% completed on December 31. There were 30 inspections made by the Division engineers during the year on the existing 26 major impoundages. Reports were prepared when indicated and presented to the owners.

There were 989 minor impounded water projects placed under Health Department supervision during the year. Of these 989, owners of 834 projects were granted authority to impound. There were 5,297 of these farm and recreational lakes under Health Department supervision at the end of the year. There were 2,587 inspections made of these minor impounded water

projects by county health department personnel and 741 made by the Division's engineers.

There were 45,503 houses sprayed within the state with a 5% DDT spray. The spraying of these houses was financed by U. S. Public Health Service and participating counties. Each of the latter was required to finance anywhere from 25% to 75% of the total operations within its borders.

Supervision was given to the operation of a drainage program in east Colbert County. Considerable ditching was completed in this area. This project required the expenditure of about \$15,000.00. It was financed by the collection of a special three-mill tax by the county within a fixed district.

A number of towns in the state carried out pest mosquito and fly control programs. Cost estimates and plans of operations of these programs were made by the engineers of the Malaria Division. Programs of this type have heretofore been given secondary consideration by this Division but are now rapidly gaining in popularity because of the availability of new insecticides. This has resulted in increasing demands upon the personnel of the Division to provide consulting services for municipal pest control projects.

It is recognized that there has been a great reduction in the number of malaria cases reported during the past year. The staff is proud of the fact that there were not any confirmed locally-transmitted malaria cases in the state during the year. However, there have been somewhere near 100 cases of malaria occurring among returned Korean veterans. This is the *vivax* type, which has been considered the local type for many years. It is not known, and public health workers are afraid to anticipate, what will happen in the potential malarious areas during the next year relative to the recurrence of the disease among those separated veterans who are now living as civilians in communities where there have been numerous epidemics in previous years. It is still known that an abundance of the malaria transmitting mosquito, *Anopheles quadrimaculatus*, is present in these areas and that these are capable of transmitting the malaria parasites.

PUBLIC WATER SUPPLIES

On December 31, 1951, there were 313 recorded public water supplies in the state of Alabama, serving approximately two million people. Two hundred and seventy plants were engaged in the production of water, and the remaining forty-three were dependent supplies. During the year six new supplies were constructed, two of which were classed as dependent supplies.

A major activity of the Water Division of the Bureau of Sanitation is the general supervision of public water supplies. In this connection 243 water plants were inspected at least one time during the year. Twenty-seven of these plants were visited twice, and seven were visited three times. During these visits the general condition

of each system, operating procedure, bacteriologic and chemical quality of the water was noted. When required during these visits, the personnel was instructed in proper operating procedure and responsible officials given advice concerning water works problems. As a further control of water quality, the Water Division interpreted the analysis of 18,480 samples submitted by the supplies to the Bureau of Laboratories for bacteriologic analysis.

Some major type of work on forty-six water works systems costing an estimated \$2,362,500 was completed during the year. Despite the control of critical construction materials, there were under construction at the end of the year twenty-two projects involving a cost of \$5,459,100.

The review of plans and specifications, conferring with consulting engineers regarding water supply projects, and the issuance of permits constitute an important phase of the Water Division engineers' work. Permits were issued for thirty-two projects for construction of either new sources of water or modification, alteration and additions to existing systems. This proposed work will cost approximately \$3,097,600.

The annual short course school for water and sewage works personnel and the meeting of the Alabama Water and Sewage Association were held in June at the University of Alabama. This joint school and meeting, sponsored by the State Health Department, the University of Alabama, and the Alabama Polytechnic Institute was well attended. Following examinations given at the end of the school, forty-two certificates of competency were awarded to water works operators. The Bureau of Sanitation has taken a leading role in this work and has assumed the responsibility of organizing and editing the Association's quarterly *Official Bulletin*.

The policy of permitting the fluoridation of public water supplies was adopted in 1951, and certain standards were set which must be met if fluoride is to be added to a supply. At the end of the year, Tuscaloosa, which began fluoridation in June, was the only municipality so treating its water. Numerous inquiries were received from municipalities and individuals regarding fluoridation.

Through the cooperation of the Water Improvement Advisory Commission, a program of chemical analysis of water in distribution systems in Alabama public water supplies was completed. This information was compiled and published during the year.

Water Division engineers continued to cooperate with the U. S. Public Health Service in the program of certifying supplies for use by interstate carriers. They also aided in the training of new sanitation officer personnel.

INSPECTION ACTIVITIES INCREASE

At the end of the year 40 counties had full-time sanitarians or veterinarians devoting part-time service to dairy, food, milk plant and meat

inspection, 20 had one or more sanitarians and veterinarians each assigned to full-time service in the field of inspection, two had the service of one sanitarian and five were without inspection service.

Food sanitation ratings were made in 27 of the 67 counties, as compared with 24 counties in 1950. The numerical average score of these was 89.49, which is slightly above the 1950 average of 89.03. Even though the average rating figures indicate only a very small degree of improvement, nevertheless, without a doubt, substantial improvements in the physical structure of the establishments, equipment and methods of operation are being progressively made.

No food-borne epidemics were reported to the Division of Inspection during the year. However, it is felt there were more than likely a few cases to occur but without epidemiologic data to substantiate. Twelve milk sanitation ratings were made. In seven of the ratings both raw and pasteurized milk were available for the consumer, whereas in the other five only pasteurized milk and milk products were offered for sale. The weighted average of the retail raw milk was 82.96, as compared with 84.98 in 1950, while that for pasteurized milk was 88.14, as compared with 86.64 in 1950. There is evidence of an increased demand for pasteurized milk and milk products throughout the state. During the year advisory assistance was given 61 counties in helping to promote suitable milk control programs.

There are 103 pasteurization plants and approximately 2,100 dairy farms under the supervision of the various county health departments of the state. Six small producer-distributor pasteurizing plants combined with larger plants or discontinued in business.

Plants in operation sold approximately 118,000 gallons of milk per day to the consuming public. Ninety-five percent or more of this milk was pasteurized. In fact, pasteurized milk is now available in every county of the state.

There is an ever-increasing desire among a great majority of those engaged in the dairy and milk industry of the state to cooperate in helping to put on the market milk and milk products of the highest quality and safety for the consumer.

The water supplies of the 42 oyster shucking and the 20 crab meat picking plants were checked for purity. Also the regular routine inspections of these establishments were conducted in the usual careful manner.

Services to the county health departments of the state relative to the various inspection activities were very, very limited. This was apparently due to the shortage of personnel and the lack of interest by most of those concerned.

Of the various types of establishments to be inspected, more than 7,000 inspections were made during the year, as compared with more than 9,000 in 1950.

TYPHUS CONTROL

Fifty-five cases of murine typhus fever were reported in 1951, 12 being confirmed by complement fixation tests.

The activities of the Division of Typhus Control included advisory and supervisory service in rat proofing, rat stoppage, rat extermination surveys, rat extermination campaigns, sanitation officer training schools, DDT dusting programs, educational campaigns, veterans training programs, commercial exterminator activities, and the collection of entomologic data. These activities were conducted by Federal, state, county and city personnel, with the necessary material furnished by each agency concerned.

Tabulated reports show the following: 103,228 premises inspected, 74,851 premises treated, 120,020 pounds of 10% DDT powder applied, 34,437 pounds of rodine poison bait used, 9,402 pounds of hydrocyanic acid gas used for gassing rat harborages and 20,755 pints of arsenic water released. A total of 786 man hours of supervision was furnished by the U. S. Public Health Service, exclusive of 49,997 man hours of supervision and labor furnished by the state, counties and cities participating.

Extermination programs, urban and rural, were conducted in 35 counties, including 64 municipal programs.

Entomologic and evaluation studies were conducted in counties in the highly endemic area. As an example, 22,000 traps were set in the business area of Mobile and 26,000 in the business section of Birmingham. In each case less than one per cent of these settings obtained rats. None was found positive for murine typhus fever, and the oriental rat flea was observed in only 17 places in Mobile and four in Birmingham. These and other studies, together with the marked decrease in reported cases, should be sufficient evidence that typhus fever will be controlled and that the rat and flea population will be reduced when recognized technical measures are applied.

PREVENTABLE DISEASES

Most communicable diseases remained relatively quiet. However, poliomyelitis landed its regular five-year haymaker.

In 1936, when the first poliomyelitis epidemic struck, the 391 cases were considered an epidemic of great proportions. But in the years that have passed, with poliomyelitis gradually stepping up its invasive tendency, the 693 cases in 1951 were considered serious but not disastrous and not out of proportion to the general trend. The regularity of striking every five years in epidemic form makes this the fourth epidemic in Alabama's history. Every county, except six, reported one or more cases.

Diphtheria continued its very slow descent, with 301 cases reported. Although the decline was not marked from 1950, when 317 cases occurred, still it showed some betterment.

Typhoid fever rose somewhat over the previous year's record. There were 74 cases of this

disease and 12 of paratyphoid reported. This compared unfavorably with the record for 1950 when 52 cases of typhoid and 16 paratyphoid were reported. Both diphtheria and typhoid fever are preventable diseases and few, if any, cases should be occurring. Hope for the future rests on the continuing fight against them.

There were 4,260 cases of cancer reported, with 919 of these being treated in the state tumor clinics. Limited funds still keep certain types of cancer from eligibility for free clinic services.

The multiple screening program was carried to 11 counties, and 200,216 individuals were x-rayed, with only 154,269 blood tested. The popularity of x-ray over the needle is reflected in these numbers.

Of the 200,216 individuals x-rayed, 367 showed definite evidence of pulmonary tuberculosis, with 1,381 being classified as tuberculosis suspects and 637 showing signs of other chest pathology.

Reading of all survey x-ray films for heart disease revealed 539 definite cases of heart disease and 756 as heart disease suspects. A breakdown of the definite cases showed 160 caused by hypertension, 254 by arteriosclerosis, 39 by rheumatic heart disease, and 86 by other etiologic factors.

From 154,269 individuals blood tested, 7,014 were found to be infected with syphilis, and 516 were suspected of this disease, although diagnostic proof was incomplete.

In connection with mass blood-testing, 97,856 individuals were tested for diabetes. Of this number 4,176 were found to be positive.

On October 1, because funds were not appropriated for this purpose, the diabetic program was dropped and the mass blood testing program was seriously curtailed.

A great deal of progress was made in the number of actual plant studies made by the Division of Industrial Hygiene. The total number of plants visited was somewhat less than in 1950, but the actual work done was much greater. Seventy plant visits were made, involving a total of approximately 30,000 employees.

VITAL STATISTICS ACTIVITIES

One of the lowest annual mortality rates of record, a continued high birth rate, and substantially reduced rates of death attributed to tuberculosis and cancer are prominent features in Alabama's 1951 vital statistics record. These measures in general reflect another year of success in the direction of good health.

The Bureau of Vital Statistics last year received nearly 163,000 pieces of mail relating to vital records. A total of \$41,114 in statutory fees was collected for certification services rendered. This sum represents 82,228 certified copies of birth, death and marriage records, not including 7,195 gratuitous copies issued on request of the Veterans Administration, and numerous searches from which no copy was issued. In addition to

the full certified copies issued, confirmations of record content were furnished in 51,956 other cases involving Social Security, retirement, family allotments, welfare payments, armed forces recruiting, criminal prosecution and investigation, estate settlements, income tax waivers, citizenship transactions and others. This service is usually rendered directly to the agency or official concerned. The record searching and certification services rendered in 1951 increased 17 per cent over the year before and compared in volume with the demand of World War II years.

A total of 133,296 original records of current births (82,615), deaths (27,076), stillbirths (2,221), and marriages (21,384) was filed in the central Bureau of Vital Statistics. In addition, 8,768 transcripts of divorce decrees and 42,768 reports of premarital physical examinations and blood tests were recorded. Revised certificates were prepared and filed for 843 adoptions, 478 legitimations and 12,366 delayed records of birth.

The Records Division processed 12,000 correction affidavits during the year. Queries numbering 4,136 were mailed to obtain correct or additional information for death certificates. Of these, satisfactory and usable replies were obtained in 3,398 cases, thereby promoting accuracy and completeness of mortality statistics. Special queries were made on 806 deaths reported as accident fatalities. A special system of accident fatality reporting is successfully operating in several of the larger police jurisdictions. The cooperative project of clearing and exchanging accident information with the State Department of Public Safety and the National Safety Council was continued. Further refinements were made during the year in the revised code for causes of death. Our nosologists attended a coding institute. These factors and the responsiveness of physicians have brought about general improvement in mortality statistics.

Progress in the direction of improved birth registration is notable. A completeness test was made in connection with the 1950 census enumeration. Results of the test show a substantial improvement in registration. Much of this is due to the relative increase of hospital deliveries. Test results indicate that midwives had a higher birth registration score than physicians who made home deliveries.

VITAL STATISTICS TRENDS

Deaths

The general rate of mortality increased slightly in 1951. There were 27,076 deaths recorded, with a rate of 8.7 per 1,000 population, as compared with 8.6 in 1950 and a five-year average of the same rate. Age, sex, and color tabulations of the 1950 census are not yet available for specific death rates which are needed to measure the current effect of certain diseases on population groups.

Infant Deaths

A total of 3,043 infants less than one year old died in 1951. This included 2,038 infants who

died during the first month after birth. The infant death rate of 36.8 per 1,000 live births is slightly higher than the 1950 rate (36.7) but substantially lower than the five-year average rate (39.0). The neonatal rate of 24.7 continues the downward trend and indicates progress in preventing deaths of the newborn. The general category of "birth injuries, asphyxia and infections of the newborn" deserves special study. During 1951 this disease group claimed the lives of 695 infants at the rate of 8.4 per 1,000 live births. Other causes peculiar to early infancy took 212 lives. Immaturity alone resulted in 781 deaths last year and ranked as the seventh major cause of death.

The number of whooping cough deaths declined slightly, but was nearly twice as large as the number of these deaths in 1949. Gastro-intestinal diseases claimed the lives of 160 children under two years of age, an increase of nearly seven per cent over the 1950 figure.

Stillbirths

The ratio of stillbirths to all births increased slightly in 1951 but was well below the five-year average. The slight increase may reflect better reporting rather than an increase in incidence.

During the year a revised definition and system of reporting fetal deaths was proposed by national agencies. The purpose was to obtain better statistics relating to stillbirths and early terminations of pregnancy. Whether or not this proposed plan will be adopted in Alabama has not been decided.

Maternal Deaths

Diseases of pregnancy and childbirth caused 147 deaths, at a rate of 17.3 per 10,000 total deliveries. This is the lowest maternal death rate in Alabama's vital statistics history, and is nearly 29 per cent less than the 1945-1949 five-year average.

Principal Causes of Death

The ten chief causes of death in 1951 accounted for 75 per cent of all deaths in the state. This group of killers takes an increasing toll of lives each year. With only one exception the order of importance has remained unchanged. Immaturity has displaced nephritis and nephrosis as the seventh ranking cause of death. The substantially reduced cancer (malignant neoplasms) and tuberculosis rates offer encouragement for sufferers and researchers in these fields.

The Ten Major Causes of Death
With Rates per 100,000 Population

Cause	1951		1950		1945-1949	
	Provisional		Provisional		(Average)	
	Number	Rate	Number	Rate	Number	Rate
1. Diseases of heart.....	8,164	263.1	7,919	258.0	6,137	204.6
2. Vascular lesions of central nervous system	3,303	106.4	3,069	100.0	2,609	87.0
3. Malignant neoplasms	2,767	89.2	2,860	93.2	2,560	85.3
4. Accidental deaths	1,962	63.2	1,911	62.3	1,848	61.6
5. Pneumonia	1,085	35.0	1,049	34.2	1,145	38.2
6. Tuberculosis	792	25.5	819	26.7	1,063	35.4
7. Immaturity*	781	9.4	718	8.8	946	11.7
8. Nephritis and nephrosis.....	726	23.4	738	24.0	1,754	58.4
9. Homicide	374	12.0	438	14.3	426	14.2
10. Diseases of arteries	359	11.6	326	10.6	287	9.6

*Rate per 1,000 live births.
Heart disease, vascular lesions, nephritis and immaturity not comparable to five-year average due to change in coding procedure.

Communicable Diseases

In this group of diseases influenza maintained the position of leading cause of death with a substantial margin over other causes. The syphilis mortality rate dropped to a new low to continue the downward trend, reflecting the ef-

fectiveness of the continuing battle against venereal diseases. Whooping cough, poliomyelitis, meningitis, encephalitis and measles each contributed to more deaths in 1951 than they did the year before. Deaths from malaria were only two last year.

Deaths Attributed to Certain Communicable
Diseases With Rates per 100,000 Population

Cause	1951		1950		1945-1949	
	Number	Rate	Number	Rate	Number	Rate
Influenza	300	9.7	258	8.4	319	10.6
Syphilis	131	4.2	169	5.5	303	10.1
Whooping cough	44	1.4	51	1.7	65	2.2
Poliomyelitis	41	1.3	22	0.7	16	0.5
Meningitis	30	1.0	26	0.8	33	1.1
Diphtheria	25	0.8	25	0.8	35	1.2
Measles	21	0.7	10	0.3	29	1.0
Encephalitis	9	0.3	5	0.2	9	0.3
Typhoid and paratyphoid	3	0.1	4	0.1	8	0.3
Malaria	2	0.1	13	0.4	23	0.8

Births

The 1951 birth rate increased slightly to reverse a three-year decline. This demographic behavior is characteristic in times of manpower mobilization for military service. An important aspect is that the stimulated birth rate is confined to the white population. This gives further evidence of the stimulus of probable military service and Selective Service requirements.

Marriages and Divorces

Returns on marriages and divorces show a decrease. The ratio of marriage to divorce (21,384 marriages and 8,768 divorces) was 2.4 last year. This is quite low but is not a reliable index. Legal requirements of residence force Alabama citizens to dissolve their marriages within this state; but, they are free to marry in other states. Many Alabama couples marry in Mississippi because there is no waiting period or antenuptial physical examination and blood test requirement.

Part III of the Board's report was adopted, as was the report as a whole.

REVISION OF THE ROLLS

The next order of business being the revision of the Rolls of the Association, the Secretary was directed by President Hubbard to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate;

and, third, dues are to be remitted for each member not exempt from payment of dues."

With this foreword, the revision proceeded.

1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Choctaw, Clarke, Clay, Cleburne, Coffee, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, Elmore, Escambia, Etowah, Fayette, Franklin, Geneva, Henry, Houston, Jackson, Jefferson, Lauderdale, Lawrence, Lee, Limestone, Lowndes, Macon, Madison, Marion, Marshall, Mobile, Montgomery, Morgan, Perry, Pickens, Pike, Shelby, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Wilcox—Total 52.

(b) County societies partially delinquent: In that they are not represented by delegates at this meeting of the Association: Cherokee, Chilton, Colbert, Conecuh, DeKalb, Greene, Lamar, Marengo, Monroe, Randolph, Winston. In representation and report: Hale—Total 12.

(c) County societies totally delinquent: Russell, St. Clair, Washington—Total 3.

No objection being made as to the correctness of this report, the President directed the Secretary to write the Societies delinquent in reports and dues and, failing to remove the delinquencies, to call the Societies to the attention of the State Board of Censors.

Whereupon the roll of County Medical Societies was declared closed until the next annual session of the Association.

The Secretary then said:

"In revising the Roll of Counsellors, five lists are prepared, designated respectively: (1) the schedule of counsellors clear on the books; (2) the schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) the schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the state, or out of their respective congressional districts; (4) the schedule of active counsellors of twenty years' standing; and (5) the schedule of counsellors-elect who have qualified as provided in the Constitution."

With such preface, the revision of the rolls was continued.

2. *Revision of the Roll of Counsellors:*

(a) Counsellors clear on the books: Abbott, Acker, Alison, Allgood, Anderson, Barber, Barnes, Baumhauer, Bell, Belue, Boyd, Bragg, Branch, Brown, Brunson, Carraway, Carter, Chenault, Cloud, Clyde, Cocke, Collier, Conwell, Craddock, Crawford, Darby, Daves, Davis, Denison, Dodson, Donald, D. C., and J. M., Eskew, Finney, Ford, Foshee, Garber, Gibson, Gill, Gipson, Givhan, Gladney, Godard, Golden, Gresham, Grote, Harper, Hill, R. C., Hill, R. Lee, Hodges, Hollis, Holloway, Isbell, Jackson, Jones, C. T., Jones, J. Paul, Kennedy, Killingsworth, Leatherwood, Lisenby, Littlejohn, Martin, Mazyck, McCown, McNease, Meadows, Moore, C. W. C., Morgan, J. O., Morgan, J. Ralph, Neal, Owings, Parker, L. D., Parker, Robert, Partlow, Perdue, Riggs, Riser, Roan, Robinson, Salter, P. P., Salter, W. M., Samford, Segrest, Sewell, Sherrill, Simpson, H. M., Simpson, John W., Skinner, Smith, Stabler, Stallworth, Thacker, Underwood, Waters, Watson, Weldon, Whiteside, Wilkerson, Wilson, Woodruff.

In the absence of objection, the President ordered passed the names of these Counsellors reported as clear on the books.

(b) Delinquent Counsellors: None.

(c) Miscellaneous Counsellors:

- (1) Life Counsellors who have died: Drs. Sydney Leach and W. J. McCain.
- (2) Active Counsellors who have died: None.
- (3) Active Counsellors who have moved: None.
- (4) Active Counsellors considered as having resigned: None.

(d) Active Counsellors of twenty years standing: Drs. F. H. Craddock and J. R. Garber.

(e) Counsellors-Elect who have properly qualified: Drs. M. C. Hollis and H. S. Holloway.

The President directed that the names of the deceased Counsellors be transferred to

the Book of the Dead; that the names of Drs. Craddock and Garber be transferred to the Roll of Life Counsellors; and that to the Roll of Active Counsellors there be added the names of Drs. Hollis and Holloway.

3. *Revision of the Roll of Correspondents:*

Dr. Richard Cattell, the 1952 Jerome Cochran Lecturer, was added to the Roll of Correspondents.

4. *Revision of the Roll of Officers:*

Dr. J. O. Morgan, Gadsden, was chosen President-Elect, Dr. T. J. Payne, Jasper, Vice-President of the Northwestern Division, Drs. Chas. E. Abbott and Robert Parker, Censors for five years; and Dr. J. G. Daves, a Censor to complete the unexpired term of Dr. J. O. Morgan.

Committees constitutionally provided to nominate Counsellors brought in the following nominations, and the nominees were elected by the Association: 4th district—Drs. Jerre Watson and Duncan Dixon; 6th—Dr. C. E. Abbott; 7th—Dr. J. G. Daves; 8th—Dr. H. M. Simpson; 9th—Dr. Landon Timberlake.

Miscellaneous Business

EXPRESSION OF THANKS

Resolution was adopted unanimously expressing thanks to the Montgomery County Medical Society for a fine meeting, with outstanding social events; and to all individuals, institutions and agencies for courtesies extended.

MEETING OF 1953

Invitation was accepted to meet in Birmingham, April 16, 17 and 18.

INSTALLATION OF OFFICERS

President-Elect McNease was installed as President and, in accepting the gavel, presented Dr. Hubbard his past-president's pin. Dr. McNease then installed his fellow officers, and declared the meeting adjourned.

THE ROLL OF COUNSELLORS

REVISION OF 1952

LIFE COUNSELLORS

Name and Address	Date of Election
Acker, Paul Jerome Morris, Mobile (1)	1923
Alison, Samuel Beekman, Minter (4)	1919
Ashcraft, Virgil Lee, Reform (7)	1919
Bedsole, James G., Jackson (1)	1922
Burdshaw, Shelby L., Headland (3)	1921
Caldwell, Edwin Valdivia, Huntsville (8)	1918
Cannon, Douglas L., Montgomery (2)	1928
Chenault, Frank L., Decatur (8)	1917
Craddock, French H., Sylacauga (4)	1932
Dabney, Marye Y., Birmingham (9)	1923
Garber, James R., Birmingham (9)	1932
Granger, Frank G., Ashford (3)	1928

Gresham, George L., Speigner (4).....	1913
Guice, Charles Lee, Gadsden (5).....	1899
Harris, Seale, Birmingham (9).....	1903
Harrison, William Groce, Birmingham (9).....	1896
Hayes, Charles Philips, Elba (3).....	1920
Hayes, Julius Pope, Clanton (6).....	1920
Heacock, Jos. D., Birmingham (9).....	1912
Heflin, Wyatt, Birmingham (9).....	1893
Hill, Robert L., Winfield (7).....	1924
Hill, Robert Somerville, Montgomery (2).....	1898
Howell, William Edward, Haleyville (7).....	1918
Howle, James Augustus, Hartselle (8).....	1895
Hubbard, T. Brannon, Montgomery (2).....	1924
Jackson, Alva A., Florence (8).....	1918
Lester, Belford S., Birmingham (9).....	1923
Lightfoot, Phillip Malcolm, Shorter (3).....	1918
Lull, Cabot, Birmingham (9).....	1919
Martin, James Cordie, Cullman (7).....	1917
Mason, James Monroe, Birmingham (9).....	1918
McAdory, Edward Dudley, Cullman (7).....	1920
McCall, Daniel T., Mobile (1).....	1923
McLeod, John Calvin, Bay Minette (2).....	1911
McLester, James Somerville, Birmingham (9).....	1913
Oswalt, G. G., Mobile (1).....	1929
Partlow, William Dempsey, Tuscaloosa (6).....	1909
Ralls, Arthur W., Gadsden (5).....	1919
Rucker, Edmon W., Birmingham (9).....	1922
Sankey, Howard J., Birmingham (9).....	1914
Scott, Walter F., Birmingham (9).....	1922
Searcy, Harvey Brown, Tuscaloosa (6).....	1923
Sledge, Edward S., Mobile (1).....	1922
Taylor, Woodie R., Town Creek (8).....	1926
Thigpen, Charles Alston, Montgomery (2).....	1900
Thomas, Eugene Marvin, Prattville (4).....	1920
Walker, Alfred A., Birmingham (9).....	1923
Walls, J. J., Alexander City (5).....	1924
Wilkinson, David Leonidas, Birmingham (9).....	1902
Total 49	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.

Those marked with an asterisk (*) are serving second terms of seven years.

Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

	Date of Elec- Expi- tion ration
Abbott, Chas. E., Tuscaloosa (6).....	†1952 to 1958
Acker, Charles T., Montevallo (6).....	†1951 to 1957
Alison, James F., Selma (4).....	†1948 to 1954
Allgood, Homer W., Fairfield (9).....	*1951 to 1958
Anderson, Thos. J., Greensboro (8).....	†1947 to 1953
Barber, William J., Butler (1).....	*1949 to 1956
Barnes, J. Mac Ilwaine, Montgomery (2).....	1949 to 1956
Baumhauer, Jacques H., Mobile (1).....	1949 to 1956
Bell, J. Mac, Mobile (1).....	*1950 to 1957
Belue, Julius O., Athens (8).....	†1951 to 1957
Boyd, Frank H., Opelika (3).....	*1946 to 1953
Bragg, John C., Decatur (8).....	*1948 to 1955
Branch, John L., Montgomery (2).....	*1951 to 1958
Brown, Elridge T., Cleveland (7).....	†1951 to 1957
Brunson, Emmett T., Samson (3).....	†1950 to 1956
Carraway, Chas. Newton, Birmingham (9).....	*1949 to 1956
Carter, William R., Repton (2).....	†1948 to 1954
Chenault, Erskine M., Decatur (8).....	†1949 to 1955
Cloud, Robert E., Ensley (9).....	*1948 to 1955
Clyde, Wallace A., Birmingham (9).....	1947 to 1954
Cocke, William T., Demopolis (1).....	*1946 to 1953
Collier, James P., Tuscaloosa (6).....	*1947 to 1954
Conwell, H. Earle, Birmingham (9).....	*1949 to 1956
Crawford, Jas. M., Arab (5).....	1950 to 1957

Darby, Henry A., Athens (8).....	1947 to 1954
Davcs, James G., Cullman (7).....	†1952 to 1958
Davis, Lewis C., Gordo (7).....	*1946 to 1953
Denison, George A., Birmingham (9).....	*1950 to 1957
Dodson, Robert B., Cullman (7).....	*1951 to 1958
Donald, Dan C., Birmingham (9).....	*1951 to 1958
Donald, Joseph M., Birmingham (9).....	1946 to 1953
Eskew, M. H., Uniontown (6).....	†1948 to 1954
Finney, James O., Gadsden (5).....	1947 to 1954
Ford, Charles E., Roanoke (5).....	*1946 to 1953
Foshee, Reuben A., Alexander City, Rt. 4 (5).....	*1951 to 1958
Gibson, Edward Lee, Enterprise (3).....	*1947 to 1954
Gill, Daniel G., Montgomery (2).....	1947 to 1954
Gipson, Amos C., Gadsden (5).....	*1951 to 1958
Givhan, Edgar G., Jr., Birmingham (9).....	1946 to 1953
Gladney, James C., Jasper (7).....	1949 to 1956
Godard, Claud G., Fairhope (2).....	*1949 to 1956
Golden, William C., Clanton (6).....	*1951 to 1958
Gresham, Walter A., Russellville (7).....	†1947 to 1953
Grote, Carl A., Huntsville (8).....	†1951 to 1957
Harper, William F., Selma (4).....	1948 to 1955
Hill, Robert C., York (6).....	†1950 to 1956
Hill, R. Lee, Haleyville (7).....	*1946 to 1953
Hodges, Rayford, Scottsboro (8).....	†1949 to 1955
Hollis, Murray C., Winfield (7).....	1951 to 1958
Holloway, H. Sellers, Notasulga (3).....	1951 to 1958
Isbell, Arthur L., Albertville (5).....	*1947 to 1954
Jackson, Albert C., Jasper (7).....	*1947 to 1954
Jones, Carl T., Newville (3).....	*1948 to 1955
Jones, J. Paul, Camden (1).....	*1950 to 1957
Kennedy, Hughes, Jr., Birmingham (9).....	*1950 to 1957
Killingsworth, Noah W., Brundidge (2).....	*1946 to 1953
Leatherwood, Elbert F., Hayneville (2).....	*1951 to 1958
Lisenby, J. Otis, Atmore (2).....	*1950 to 1957
Littlejohn, Wilmot S., Birmingham (9).....	1948 to 1955
Martin, John A., Montgomery (2).....	†1947 to 1953
Mazyck, Arthur, Dothan (3).....	1948 to 1955
McCown, William G., Huntsville (8).....	1947 to 1954
McNease, Benjamin W., Fayette (7).....	1947 to 1954
Meadows, James A., Birmingham (9).....	*1950 to 1957
Moore, C. W. C., Talladega (4).....	†1951 to 1957
Morgan, J. Orville, Gadsden (5).....	*1946 to 1953
Morgan, J. Ralph, Birmingham (9).....	*1950 to 1957
Neal, Ralph D., Grove Hill (1).....	1948 to 1955
Owings, W. J. B., Brent (6).....	*1948 to 1955
Parker, Lorenzo D., Andalusia (2).....	†1947 to 1953
Parker, Robert, Montgomery (2).....	1948 to 1955
Partlow, Rufus C., Tuscaloosa (6).....	*1950 to 1957
Perdue, James D., Mobile (1).....	†1947 to 1953
Riggs, Frank W., Montgomery (2).....	*1950 to 1957
Riser, William H., Lafayette (5).....	†1949 to 1955
Roan, Avery M., Decatur (8).....	*1948 to 1955
Robinson, E. Bryce, Birmingham (9).....	1948 to 1955
Salter, Paul P., Eufaula (3).....	1948 to 1955
Salter, Wilbur M., Anniston (4).....	†1948 to 1954
Samford, Millard W., Opelika (3).....	1946 to 1953
Segrest, Grady O., Mobile (1).....	*1949 to 1956
Sewell, John Ferris, Wetumpka (4).....	*1947 to 1954
Sherrill, John D., Birmingham (9).....	*1946 to 1953
Simpson, Harry M., Florence (8).....	†1952 to 1958
Simpson, John W., Birmingham (9).....	*1949 to 1956
Skinner, Marcus, Selma (4).....	*1946 to 1953
Smith, Gordon R., Ozark (3).....	†1948 to 1954
Stabler, Lorenzo V., Greenville (2).....	†1951 to 1957
Stallworth, William A., Frisco City (1).....	†1951 to 1957
Thacker, Vincent J., Dothan (3).....	†1949 to 1955
Underwood, S. Sellers, Birmingham (9).....	1949 to 1956
Waters, Hinton W., Opp (2).....	*1946 to 1953
Watson, Jerre, Anniston (4).....	†1952 to 1958
Weldon, Joseph M., Mobile (1).....	†1949 to 1955
Whiteside, Maurice S., Cullman (7).....	*1948 to 1955
Wilkerson, Arthur F., Marlon (6).....	1950 to 1957
Wilson, Frank C., Birmingham (9).....	*1949 to 1956
Woodruff, Gerald G., Anniston (4).....	*1947 to 1954
Total 98	

COUNSELLORS-ELECT

Dixon, Duncan P., Talladega (4).....	1952 to 1959
Timberlake, Landon, Birmingham (9).....	1952 to 1959

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1952, there were 1801 members in the County Medical Societies. That would give one Counsellor to every 18 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

Names of Counsellors—W. T. Cocke, Marengo; W. J. Barber, Choctaw; R. D. Neal, Clarke; J. H. Baumhauer, G. O. Segrest, J. M. Weldon, J. D. Perdue and J. Mac Bell, Mobile; W. A. Stallworth, Monroe; J. Paul Jones, Wilcox.

County	Members	Counsellors
Choctaw	6	1
Clarke	10	1
Marengo	12	1
Mobile	187	5
Monroe	9	1
Washington	1	0
Wilcox	7	1
	232	10

SECOND DISTRICT

Names of Counsellors—C. G. Godard, Baldwin; L. V. Stabler, Butler; W. R. Carter, Conecuh; L. D. Parker and H. W. Waters, Covington; J. O. Lisenby, Escambia; E. F. Leatherwood, Lowndes; J. L. Branch, F. W. Riggs, J. A. Martin, J. M. Barnes, Robert Parker and D. G. Gill, Montgomery; and N. W. Killingsworth, Pike.

County	Members	Counsellors
Baldwin	20	1
Butler	10	1
Conecuh	9	1
Covington	22	2
Crenshaw	9	0
Escambia	15	1
Lowndes	3	1
Montgomery	126	6
Pike	17	1
	231	14

THIRD DISTRICT

Names of Counsellors—P. P. Salter, Barbour; E. L. Gibson, Coffee; G. R. Smith, Dale; E. T. Brunson, Geneva; C. T. Jones, Henry; V. J.

Thacker and Arthur Mazyck, Houston; F. H. Boyd and M. W. Samford, Lee; H. S. Holloway, Macon.

County	Members	Counsellors
Barbour	11	1
Bullock	4	0
Coffee	11	1
Dale	8	1
Geneva	12	1
Henry	7	1
Houston	29	2
Lee	20	2
Macon	8	1
Russell	6	0
	116	10

FOURTH DISTRICT

Names of Counsellors—W. M. Salter, Jerre Watson and G. G. Woodruff, Calhoun; J. F. Allison, W. F. Harper and Marcus Skinner, Dallas; J. F. Sewell, Elmore; and C. W. C. Moore and D. P. Dixon, Talladega.

County	Members	Counsellors
Autauga	5	0
Calhoun	41	3
Clay	6	0
Coosa	3	0
Dallas	39	3
Elmore	11	1
St. Clair	8	0
Talladega	26	2
	139	9

FIFTH DISTRICT

Names of Counsellors—W. H. Riser, Chambers; A. C. Gipson, J. O. Finney and J. O. Morgan, Etowah; A. L. Isbell and J. M. Crawford, Marshall; C. E. Ford, Randolph; and R. A. Foshee, Tallapoosa.

County	Members	Counsellors
Chambers	15	1
Cherokee	3	0
Cleburne	4	0
DeKalb	16	0
Etowah	68	3
Marshall	23	2
Randolph	8	1
Tallapoosa	18	1
	155	8

SIXTH DISTRICT

Names of Counsellors—W. J. B. Owings, Bibb; W. C. Golden, Chilton; T. J. Anderson, Hale; M. H. Eskew and A. F. Wilkerson, Perry; C. T. Ackner, Shelby; R. C. Hill, Sumter; and J. P. Collier, R. C. Partlow and C. E. Abbott, Tuscaloosa.

County	Members	Counsellors
Bibb	7	1
Chilton	11	1
Greene	5	0
Hale	6	1
Perry	10	2

Shelby	12	1
Sumter	16	1
Tuscaloosa	62	3
	129	10

SEVENTH DISTRICT

Names of Counsellors—E. T. Brown, Blount; R. B. Dodson, J. G. Daves and M. S. Whiteside, Cullman; B. W. McNease, Fayette; W. A. Gresham, Franklin; M. C. Hollis, Marion; L. C. Davis, Pickens; A. C. Jackson and J. C. Gladney, Walker; and R. Lee Hill, Winston.

<i>County</i>	<i>Members</i>	<i>Counsellors</i>
Blount	12	1
Cullman	23	3
Fayette	9	1
Franklin	13	1
Lamar	9	0
Marion	11	1
Pickens	7	1
Walker	30	2
Winston	12	1
	126	11

EIGHTH DISTRICT

Names of Counsellors—Rayford Hodges, Jackson; H. M. Simpson, Lauderdale; H. A. Darby and J. O. Belue, Limestone; W. G. McCown and C. A. Grote, Madison; and E. M. Chenault, J. C. Bragg and A. M. Roan, Morgan.

<i>County</i>	<i>Members</i>	<i>Counsellors</i>
Colbert	22	0
Jackson	12	1
Lauderdale	31	1
Lawrence	10	0
Limestone	11	2
Madison	37	2
Morgan	31	3
	154	9

NINTH DISTRICT

Names of Counsellors—J. D. Sherrill, R. E. Cloud, C. N. Carraway, H. Earle Conwell, J. W. Simpson, F. C. Wilson, G. A. Denison, Hughes Kennedy, Jr., J. A. Meadows, Ralph Morgan, D. C. Donald, Joe M. Donald, E. G. Givhan, Jr., H. W. Allgood, W. A. Clyde, E. Bryce Robinson, W. S. Littlejohn, S. S. Underwood, and Landon Timberlake.

<i>County</i>	<i>Members</i>	<i>Counsellors</i>
Jefferson	518	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association

such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

<i>Name and Address</i>	<i>Date of Election</i>
Andrew J. Coley, Oklahoma City	1909
Rudolph Matas, New Orleans	1921
Henry A. Christian, Boston	1921
H. A. Royster, Raleigh, N. C.	1926
G. Canby Robinson, Baltimore	1928
Russell L. Cecil, New York	1934
Frank H. Lahey, Boston	1937
T. M. McMillan, Philadelphia	1938
George T. Pack, New York	1939
E. V. McCollum, Baltimore	1940
Harvey B. Stone, Baltimore	1942
Albert C. Furstenberg, Ann Arbor	1943
Tinsley R. Harrison, Birmingham	1944
Alton Ochsner, New Orleans	1946
Reginald Fitz, Boston	1947
Andrew C. Ivy, Chicago	1948
Max Thorek, Chicago	1949
Paul D. White, Boston	1950
Emil Novak, Baltimore	1951
Richard Cattell, Boston	1952

SCHEDULE OF THE ANNUAL SESSIONS
AND PRESIDENTS SINCE THE RE-
ORGANIZATION IN 1868

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry	1868
Mobile—Albert Galatin Mabry	1869
Montgomery—Richard Frazer Michel	1870
Mobile—Francis Armstrong Ross	1871
Huntsville—Thomas Childress Osborne	1872
Tuscaloosa—George Ernest Kumpe	1873
Selma—George Augustus Ketchum	1874
Montgomery—Job Sobieski Weatherly	1875
Mobile—John Jefferson Dement	1876
Birmingham—Edward Davies McDaniel	1877
Eufaula—Peter Bryce	1878
Selma—Robert Dickens Webb	1879
Huntsville—Edmond Pendleton Gaines	1880
Montgomery—William Henry Anderson	1881
Mobile—John Brown Gaston	1882
Birmingham—Clifford Daniel Parke	1883
Selma—Mortimer Harvey Jordan	1884
Greenville—Benjamin Hogan Riggs	1885
Anniston—Francis Marion Peterson	1886
Tuscaloosa—Samuel Dibble Seelye	1887
Montgomery—Edward Henry Sholl	1888
Mobile—Milton Columbus Baldrige	1889
Birmingham—Charles Higgs Franklin	1890
Huntsville—William Henry Sanders	1891
Montgomery—Benjamin James Baldwin	1892
Selma—James Thomas Searcy	1893
Birmingham—Thaddeus Lindley Robertson	1894
Mobile—Richard Matthew Fletcher	1895
Montgomery—William Henry Johnston	1896
Selma—Barkley, Wallace Toole	1897
Birmingham—Luther Leonidas Hill	1898
Mobile—Henry Altamont Moody	1899
Montgomery—John Clarke LeGrande	1900

*Place and President**Year*

Selma—Russell McWhorter Cunningham	1901
Birmingham—Edwin Lesley Marechal	1902
Talladega—Glenn Andrews	1903
Mobile—Matthew Bunyan Cameron	1904
Montgomery—Capers Capehart Jones	1905
Birmingham—Eugene DuBose Bondurant	1906
Mobile—George Tighlman McWhorter	1907
Montgomery—Samuel Wallace Welch	1908
Birmingham—Benjamin Leon Wyman	1909
Mobile—Wooten Moore Wilkerson	1910
Montgomery—Wyatt Heflin Blake	1911
Birmingham—Lewis Coleman Morris	1912
Mobile—Harry Tutwiler Inge	1913
Montgomery—Robert S. Hill	1914
Birmingham—Benjamin Britt Simms	1915
Mobile—James Norment Baker	1916
Montgomery—Henry Green	1917
Birmingham—William Dempsey Partlow	1918
Mobile—Isaac LaFayette Watkins	1919
Anniston—James Somerville McLester	1920
Montgomery—Louis William Johnston	1921
Birmingham—Dyer F. Talley	1922
Mobile—Walter S. Britt	1923
Montgomery—W. W. Harper	1924
Birmingham—J. D. Heacock	1925
Mobile—C. A. Mohr	1926
Montgomery—A. L. Harlan	1927
Birmingham—John D. S. Davis	1928
Mobile—E. V. Caldwell	1929
Montgomery—L. E. Broughton	1930
Birmingham—W. G. Harrison	1931
Mobile—Toulmin Gaines	1932
Montgomery—Samuel Kirkpatrick	1933
Birmingham—James R. Garber	1934
Mobile—William M. Cunningham	1935
Montgomery—Charles A. Thigpen	1936
Birmingham—Lloyd Noland	1937
Mobile—E. S. Sledge	1938
Montgomery—Seale Harris, Sr.	1939
Birmingham—M. S. Davie	1940
Mobile—Samuel A. Gordon	1941
Montgomery—James M. Mason	1942
Birmingham—Harvey B. Searcy	1943
Montgomery—Fred W. Wilkerson	1944
Meeting Cancelled—Walter F. Scott	1945
Birmingham—Walter F. Scott	1946
Birmingham—Carl A. Grote	1947
Mobile—Jesse P. Chapman	1948
Montgomery—J. Paul Jones	1949
Birmingham—Frank C. Wilson	1950
Mobile—Joseph M. Weldon	1951
Montgomery—T. Brannon Hubbard	1952

SECRETARIES OF THE ASSOCIATION

1852-1854	George A. Ketchum
1854-1855	R. Miller
1869-1873	Jerome Cochran
1874-1878	B. H. Riggs
1879-1892	T. A. Means
1893-1897	J. R. Jordan
1897-1904	G. P. Waller
1904-1906	L. C. Morris
1906-1915	J. N. Baker
1915-1923	H. G. Perry

1923-1924	Douglas L. Cannon
1924-1930	B. B. Simms
1930-1940	Douglas L. Cannon

TREASURERS OF THE ASSOCIATION

1854-1855	W. P. Reese
1869-1898	W. C. Jackson
1898-1915	H. G. Perry
1915-1939	J. U. Ray

SECRETARY-TREASURERS OF THE
ASSOCIATION

1940-	Douglas L. Cannon
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SCHEDULE OF JEROME COCHRAN
LECTURERS

- 1899—J. T. Searcy, Tuscaloosa—What Is Insanity?
 1900—Wm. Osler, Baltimore—Not present.
 1901—Wm. Osler, Baltimore—Not present.
 1902—Nathan Bozeman, New York—Declined.
 1903—George H. Price, Nashville—The History of Medicine.
 1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
 1905—Robert Abbe, New York—The Problems of Surgery.
 1906—Joseph Collins, New York—Arteriosclerosis.
 1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
 1908—E. L. Marechal, Mobile—Absent.
 1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
 1910—Frank S. Meara, New York—Some Problems of Nutrition in Early Life.
 1911—Rudolph Matas, New Orleans—Inflammatory Tuberculosis.
 1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.
 1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.
 1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.
 1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.
 1916—Howard A. Kelly, Baltimore—Radium Therapy.
 1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.
 1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.
 1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.
 1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.
 1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.
 1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Baltimore—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

1934—Russell L. Cecil, New York—Present Trends in the Study of Rheumatic Fever and Rheumatoid Arthritis.

1935—George H. Semken, New York—A Consideration of Tumors of the Breast.

1936—William D. Partlow, Tuscaloosa—A Debt the World Owes Medical Science.

1937—Frank H. Lahey, Boston—Carcinoma of the Colon and Rectum.

1938—T. M. McMillan, Philadelphia—An Optimistic View of Some of the Problems of Heart Disease.

1939—George T. Pack, New York—Recent Advances in the Radiation Therapy of Cancer.

1940—E. V. McCollum, Baltimore—Some Contributions of Nutritional Research to Clinical Medicine.

1941—M. Y. Dabney, Birmingham—The Story of Breast Cancer.

1942—Harvey B. Stone, Baltimore—Biliary Diseases as Seen by a Surgeon.

1943—A. C. Furstenberg, Ann Arbor—Objectives in Medical Education.

1944—Tinsley R. Harrison, Dallas, Texas—The Value and Limitations of Laboratory Tests in the Practice of Medicine.

1945—Meeting Cancelled.

1946—Alton Ochsner, New Orleans—The Influence of Serendipity on Medicine.

1947—Reginald Fitz, Boston—The Early Characteristics of Certain Chronic Diseases.

1948—Andrew C. Ivy, Chicago—The Gallbladder in Health and Disease.

1949—Max Thorek, Chicago—Cholecystectomy: Its Technical Variations.

1950—Paul D. White, Boston—Historical Delays in the Application of Knowledge About the Heart.

1951—Emil Novak, Baltimore—The Relation of Hormones to Female Genital Tumors.

1952—Richard Cattell, Boston—Carcinoma of the Colon and Rectum.

OFFICERS OF THE ASSOCIATION

PRESIDENT

B. W. McNease (1953)..... Fayette

PRESIDENT-ELECT

J. O. Morgan (1954)..... Gadsden

VICE-PRESIDENTS

A. J. Treherne (1953)..... Atmore

J. O. Finney (1954)..... Gadsden

S. W. Windham (1955)..... Dothan

T. J. Payne, Jr. (1956)..... Jasper

SECRETARY-TREASURER

Douglas L. Cannon (1955)..... Montgomery

THE STATE BOARD OF CENSORS

E. V. Caldwell, Chm. (1955)..... Huntsville

J. G. Daves (1955)..... Cullman

French Craddock (1953)..... Sylacauga

John L. Branch (1953)..... Montgomery

E. G. Givhan, Jr. (1954)..... Birmingham

J. D. Perdue (1954)..... Mobile

John W. Simpson (1956)..... Birmingham

J. Paul Jones (1956)..... Camden

Robert Parker (1957)..... Montgomery

C. E. Abbott (1957)..... Tuscaloosa

STATE HEALTH OFFICER

D. G. Gill (1957)..... Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—C. A. Grote..... Huntsville

Alternate—G. A. Denison..... Birmingham

(Term: January 1, 1951-December 31, 1952)

Delegate—J. Paul Jones..... Camden

Alternate—D. G. Gill..... Montgomery

(Term: January 1, 1952-December 31, 1953)

Delegate—C. A. Grote..... Huntsville

Alternate—E. B. Robinson..... Fairfield

(Term: January 1, 1953-December 31, 1954)

COMMITTEE ON MEDICAL SERVICE AND PUBLIC RELATIONS

J. G. Daves, Cullman..... 1953

John Day Peake, Mobile..... 1953

J. P. Chapman, Selma..... 1954

J. Paul Jones, Camden..... 1954

E. L. Gibson, Enterprise..... 1955

Joe H. Little, Mobile..... 1955

Francis M. Thigpen, Montgomery..... 1956

J. O. Finney, Gadsden..... 1956

H. L. Holley, Birmingham..... 1957

H. G. Hodo, Jr., Fayette..... 1957

B. W. McNease, Fayette..... *ex officio*

Douglas L. Cannon, Montgomery..... *ex officio*

D. G. Gill, Montgomery..... *ex officio*

COMMITTEE ON MENTAL HYGIENE

Jack Jarvis, Chairman, Birmingham	1955
Frank A. Kay, Birmingham	1953
J. S. Tarwater, Tuscaloosa	1954

COMMITTEE ON MATERNAL AND CHILD HEALTH

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Hughes Kennedy, Jr., Birmingham	1955
A. E. Thomas, Montgomery	1953

COMMITTEE ON CANCER CONTROL

John Day Peake, Chairman, Mobile	1955
Roger D. Baker, Birmingham	1953
F. H. Craddock, Jr., Sylacauga	1954
W. N. Jones, Birmingham	1956
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COMMITTEE ON PREVENTION OF BLINDNESS AND
DEAFNESS

Alston Callahan, Chairman, Birmingham	1955
Karl Benkwith, Montgomery	1953
R. J. Grayson, Selma	1954

COMMITTEE ON POSTGRADUATE STUDY

Ralph McBurney, Chairman, Birmingham	1954
Cabot Lull, Birmingham	1953
A. S. Dix, Mobile	1955

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RELATIONSHIPS

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B. Frank Jackson, Jr., Montgomery	1953
R. E. Cloud, Ensley	1954

COMMITTEE ON ANESTHESIOLOGY

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W. P. May, Montgomery	1954
Alice McNeal, Birmingham	1955

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A. H. Russakoff, Birmingham	1953
L. O. Davenport, Birmingham	1954

COMMITTEE ON INDUSTRIAL MEDICINE

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R. A. Hamrick, Fairfield	1953
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REGISTRATION AT THE EIGHTY-FOURTH ANNUAL SESSION, MONTGOMERY

APRIL 17-19, 1952

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Gresham, G. L., Wetumpka

Harris, Seale, Birmingham
Hayes, C. P., Elba
Heacock, J. D., Birmingham
Heflin, Wyatt, Birmingham
Hill, Robert L., Winfield
Howell, W. E., Haleyville
Howle, J. A., Hartselle
Hubbard, T. B., Montgomery
Lightfoot, P. M., Shorter

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Martin, J. C., Cullman
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Thigpen, C. A., Montgomery
Walker, A. A., Birmingham
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Wilkinson, D. L., Birmingham

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Collier, J. P., Tuscaloosa
Crawford, J. M., Arab
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Denison, G. A., Birmingham
Dodson, R. B., Cullman
Donald, D. C., Birmingham
Donald, J. M., Birmingham

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Finney, J. O., Gadsden
Ford, C. E., Roanoke
Foshee, R. A., Alexander City
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Gipson, A. C., Gadsden
Givhan, E. G., Birmingham
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Hill, R. Lee, Haleyville
Hodges, Rayford, Scottsboro
Hollis, M. C., Winfield
Holloway, H. S., Notasulga
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Jones, J. P., Camden
Kennedy, Hughes, Jr., Birmingham
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Littlejohn, W. S., Birmingham
Martin, J. A., Montgomery
Mazyck, Arthur, Dothan
McCown, W. G., Huntsville
McNease, B. W., Fayette
Moore, C. W. C., Talladega
Morgan, J. O., Gadsden
Morgan, J. R., Birmingham
Neal, R. D., Grove Hill
Owings, W. J. B., Brent
Parker, L. D., Andalusia
Parker, Robert, Montgomery
Perdue, J. D., Mobile
Riggs, F. W., Montgomery
Riser, W. H., Sr., Lafayette
Roan, A. M., Decatur
Robinson, E. B., Jr., Birmingham
Salter, P. P., Eufaula
Salter, W. M., Anniston
Segrest, G. O., Mobile
Sewell, J. F., Wetumpka
Simpson, J. W., Birmingham
Stabler, L. V., Greenville
Thacker, V. J., Dothan

Underwood, S. S., Birmingham
Waters, H. W., Opp

Watson, Jerre, Anniston
Whiteside, M. S., Cullman

Wilkerson, A. F., Marion
Wilson, F. C., Birmingham
Woodruff, G. G., Anniston

DELEGATES

Autauga: G. E. Newton, Prattville; R. K. Nichols, Prattville
Baldwin: Julius Michaelson, Foley
Barbour: C. J. Ross, Clayton
Bibb: A. C. Pratt, Jr., Centreville
Blount: E. W. Gordon, Oneonta
Bullock: O. Emfinger, Union Springs
Butler: J. C. Johnston, Chapman; J. E. Kendrick, Greenville
Calhoun: H. E. Gray, Anniston; Walker Reynolds, Jr., Anniston
Chambers: P. W. Austin, Shawmut
Choctaw: S. T. Miller, Yantley
Clarke: P. H. Warren, Jackson
Clay: J. E. Foster, Lineville
Clebune: F. R. Wood, Heflin
Coffee: J. S. DuBois, Enterprise
Coosa: M. E. Vaughn, Goodwater; R. W. Wadeson, Goodwater
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Crenshaw: F. J. Lee, Luverne
Cullman: F. C. Stitt, Cullman
Dale: L. D. McLaughlin, Ozark; B. D. Petrey, Ozark
Dallas: J. P. Chapman, Jr., Selma; J. P. Howell, Selma; J. R. Williams, Selma
Elmore: C. S. Cotlin, Jr., Wetumpka; E. G. Moore, Tallassee

Escambia: F. M. Phillippi, Brewton; A. J. Treherne, Atmore
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Fayette: T. M. Wiley, Jr., Fayette
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Geneva: W. G. Paul, Geneva; H. B. Strickland, Jr., Hartford
Henry: J. R. Shell, Abbeville; L. P. Shell, Abbeville
Houston: G. E. Johnson, Dothan; G. H. Stokes, Dothan
Jackson: A. C. Collins, Scottsboro; E. L. Trammell, Scottsboro
Jefferson: A. W. Davidson, Bessemer; D. C. Donald, Birmingham; J. G. Galbraith, Birmingham; H. H. Henderson, Birmingham; W. H. Riser, Jr., Birmingham; L. E. Sorrell, Birmingham; Landon Timberlake, Birmingham
Lauderdale: W. W. Alexander, Florence
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Lee: B. T. Bruce, Opelika; H. S. Weldon, Opelika
Limestone: J. S. Crutcher, Jr., Athens
Lowndes: J. J. Kirschenfeld, Fort Deposit; W. L. Staggers, Benton

Macon: B. W. Booth, Shorter; R. F. Higgins, Tuskegee
Madison: M. M. Duncan, Huntsville
Marion: R. H. Mason, Hamilton
Marshall: K. G. Christian, Albertville; M. T. Hunt, Boaz
Mobile: J. H. Little, Mobile; G. W. Newburn, Jr., Mobile; W. L. Sellers, Jr., Mobile
Montgomery: Harry Glazer, Montgomery; L. L. Hill, Jr., Montgomery; B. F. Jackson, Montgomery; P. S. Mertins, Jr., Montgomery
Morgan: J. M. Chenault, Decatur; C. K. Pitt, Decatur
Perry: T. R. Marvin, Marion
Pickens: R. K. Wilson, Aliceville
Pike: J. O. Colley, Jr., Troy; W. P. Stewart, Troy
Shelby: Willena Peck, Montevallo; W. E. Stinson, Siluria
Sumter: R. E. Hale, Bellamy; T. B. Norton, York
Talladega: D. P. Dixon, Talladega; J. M. Slaughter, Talladega
Tallapoosa: J. T. Banks, Dadeville; J. H. Harrison, Alexander City
Tuscaloosa: W. D. Anderson, Tuscaloosa
Walker: M. W. Haisten, Gorgas
Wilcox: P. E. Godbold, Pine Hill; J. A. Thompson, Pine Apple

MEMBERS

A

Abernethy, W. H., Troy
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Adams, M. Vaun, Mobile
Allgood, Homer, Alabaster
Anderson, B. F., Sellers
Anderson, M. N., Birmingham
Armstrong, J. H., Selma
Ashurst, Robert, Montgomery
Askin, H. E., Alexander City

B

Baker, Roger D., Birmingham
Barclift, W. Clare, Birmingham
Bartlett, H. S., Montgomery
Becton, J. A., Birmingham
Bell, H. V., Montgomery
Bender, T. J., Mobile
Benkwith, K. B., Montgomery
Berrey, I. C., Birmingham

Berrey, Ruth, Birmingham
Bibb, R. C., Huntsville
Bird, B. C., Montgomery
Blackwell, C. C., Birmingham
Blundell, G. P., Birmingham
Bograd, Nathan, Montgomery
Boozier, T. S., Montgomery
Boulware, T. M., Birmingham
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Bragg, E. G., Elba
Brannon, W. T., Montgomery
Branscomb, Louise, Birmingham
Brantley, J. A., Troy
Britton, J. W., Foley
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Brock, Jack, Gadsden
Brown, M. W., Auburn
Browne, W. C., Vincent
Burdshaw, H. B., Dothan
Burleson, P. W., Birmingham
Bush, J. D., Gadsden

C

Callahan, Alston, Birmingham
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Cameron, J. M., Montgomery
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Carmichael, J. L., Birmingham
Carmichael, J. N., Fairfield
Carpenter, B. S., Fairfield
Carraway, B. M., Birmingham
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Chandler, J. R., Bessemer
Chapman, J. A., Alexander City
Chapman, J. R., East Tallassee
Chapman, J. P., Sr., Selma
Chenoweth, A. I., Birmingham
Clark, Jean, Vincent
Clements, R. M., Tuscaloosa
Clemmons, L. H., Cullman
Climo, H. J., Birmingham
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Coe, H. D., Midland City
Cohen, N. R., Montgomery
Cole, L. G., Talladega
Coleman, W. E., Birmingham
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Collins, H. C., Montgomery
Colvin, G. W., Lincoln
Comer, E. T., Eufaula
Comer, J. F., Birmingham
Connell, I. L., Jacksonville, Fla.
Coston, R. M., Birmingham
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Crabtree, J. C., Mulga
Crawford, R. D., Dothan
Crowder, J. W., West Blocton
Crelly, H. C., Birmingham
Cummins, M. L., Ashland

D

Daniel, W. A., Montgomery
Dark, H. U., Alexander City
Davie, N. T., Anniston
Davis, J. W., Montgomery
Denney, J. L., Alexander City
Dennis, J. W., Auburn
Dix, A. S., Mobile
Dixon, R. E., Alberta
Doherty, D. H., Selma
Donald, J. G., Mobile
Dorrough, B. F., Montgomery
Douglas, G. F., Birmingham
Dowling, H. B., Mobile
Dumas, J. F., Mobile
Dunn, J. E., Wetumpka
Durrett, J. J., Birmingham

E

Edwards, E. H., Leeds
Edwards, W. A., Wetumpka
Ellis, J. T., Dothan
Elmore, J. D., Birmingham
Eppes, Nell R., Eufaula
Eppes, Kendall, Eufaula
Evans, J. W., Huntsville

F

Floyd, S. J., Phenix City
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Foster, H. A., Heflin
Foster, J. O., Luverne
Freeman, A. M., Birmingham
French, J. H., Montgomery
Fudge, Walter, Lamison

G

Gayden, L. R., Montgomery
Gladden, J. R., Langdale
Glenn, E. B., Birmingham
Gillespie, J. P., Gadsden
Goldstein, Howard, Montgomery
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Graham, A. H., Montgomery
Graham, J. B., Birmingham
Graham, Stanley, Birmingham
Graves, S. O., Birmingham
Guin, J. C., Tuscaloosa
Guthrie, R. F., Birmingham

H

Haisten, D. C., Dothan
Hall, G. W., Tuscaloosa
Hamner, L. H., Camp Hill
Hardy, J. P., Birmingham
Hardy, W. B., Birmingham
Harmon, J. S., Elmore
Harris, E. A., Birmingham
Harris, W. M., Birmingham
Harrison, T. R., Birmingham
Hawthorne, R. O., Montgomery
Henderson, E. A., Opelika
Herrod, Henry, Tuscaloosa
Hicks, D. M., Cottonwood
Hill, H. W., Carrollton
Hirsh, J. E., Birmingham
Hodges, E. J., Scottsboro
Holding, B. F., Montgomery
Hopkins, P. I., Dothan
Holley, H. L., Birmingham
Hood, J. R., Birmingham
Hudson, P. D., Montgomery
Hudson, H. C., Birmingham
Huey, T. F., Anniston
Hughes, B. A., Birmingham
Hunt, M. C., Fairfax
Hurst, J. C., Opp
Huskey, A. L., Opelika
Hutchinson, H. H., Montgomery

I

Irwin, W. H., Leeds

J

Jabour, E. P., Montgomery
Jackson, Franklin, Montgomery
Jarvis, Jack, Birmingham
Jenkins, J. F., Birmingham
Johnson, C. A., Birmingham
Johnson, C. D., Montgomery
Johnson, G. L., Montgomery
Johnston, J. D., Brundidge
Jones, J. A., Montgomery
Jones, W. N., Birmingham
Jordan, H. C., Fairhope
Jordan, J. S., Birmingham
Jordan, O. L., Tuscaloosa
Joseph, Kellie, Birmingham

K

Kaiser, E. N., Montgomery
Kay, F. A., Birmingham
Kessler, C. R., Birmingham
Killian, C. D., Ft. Payne
Kimbrough, R. M., Birmingham
Kimmey, J. M., Elba
Kinkead, Kyle, Birmingham
Kirkpatrick, M. B., Montgomery
Klapper, Margaret, Birmingham
Knowles, Clyde, Camp Rucker
Kocour, E., Montgomery

L

Laslie, J. C., Montgomery
Lavender, Claude, Hartselle
Lawrence, W. E., Birmingham

Lawson, C. L., Gadsden
Lee, L. T., Selma
Lewis, T. K., Birmingham
Leyden, H. A., Anniston
Lineberry, E. D., Birmingham
Little, W. F., Wetumpka
London, I. D., Montgomery
Long, D. J., Montgomery
Long, I. R., Montgomery
Long, R. H., Selma

M

MacGuire, H. C., Montgomery
Majure, E. O., Tallassee
Martin, F. J., Montgomery
Marzoni, F. A., Birmingham
Massey, B. J., Enterprise
Matthews, A. D., Ozark
McCafferty, E. L., Mobile
McCarn, O. C., Birmingham
McCorkle, F. W., Gadsden
McDowell, J. F., Birmingham
McFatter, T. K., Dothan
McIntosh, E. L., Camden
McLester, J. B., Birmingham
Meadows, J. A., Birmingham
Minor, W. H., Mobile
Monsky, D. B., Montgomery
Moody, Maxwell, Tuscaloosa
Moore, E. M., Montgomery
Morgan, P. A., Birmingham
Morton, B. F., Birmingham
Moss, J. E., Mobile

N

Nettles, J. D., Sweet Water
Neville, C. W., Birmingham
Nickson, H. C., Montgomery

O

O'Connell, G. A., Anniston
O'Dell, J. W., Birmingham
Odom, C. W., Birmingham
Oliver, R. K., Montgomery
Owens, Arthur, Birmingham

P

Palmer, G. F., Montgomery
Palmer, Julian, Opelika
Parsons, J. L., Birmingham
Parsons, W. C., Birmingham
Partlow, D. B., Tuscaloosa
Patton, W. B., Mobile
Paul, T. O., Birmingham
Peake, J. D., Mobile
Penton, J. R., Montgomery
Penton, Randolph, Montgomery
Perry, G. T., Brewton
Perry, Joe, Montgomery
Peters, G. S., Montgomery
Powell, F. M., Lanett
Prescott, J. L., Birmingham
Prescott, W. E., Birmingham
Price, E. S., Tuscaloosa
Pritchett, Thomas, Town Creek

R

Ramey, D. R., Greensboro
Ray, Weldon, Bessemer
Reagan, Cas, Birmingham
Reed, T. W., Brewton
Relfe, C. B., Montgomery
Reynolds, F. D., Montgomery
Reynolds, W. F., Montgomery
Rosen, H. L., Montgomery
Rosser, W. J., Birmingham
Rowe, Mercer, Gadsden
Rumpanos, S. N., Mobile
Rutherford, C. L., Mobile

S

Scott, W. F., Jr., Birmingham
Selikoff, S. J., Montgomery
Sellers, I. J., Birmingham
Shaddix, M. L., Alabama City
Shamblin, W. G., Tuscaloosa
Shannon, P. W., Birmingham
Simon, H. E., Birmingham
Simpson, S. P., Gadsden
Sims, A. G., Birmingham
Sims, J. A., Talladega
Smith, Donald, Eutaw
Smith, G. H., Ensley
Smith, Hampton, Birmingham
Smith, J. S., Montgomery
Smith, R. J., Birmingham
Smith, W. H. Y., Montgomery

Smith, W. L., Montgomery
Spann, C. L., Dothan
Springer, H. C., Bessemer
Stabler, A. A., Greenville
Stabler, A. L., Birmingham
Stabler, E. V., Greenville
Stanley, J. F., Enterprise
Stanley, W. A., Enterprise
Stickley, C. S., Montgomery
Stough, W. V., Montgomery
Suggs, S. D., Montgomery
Sweeney, D. B., Birmingham

T

Tarwater, J. S., Tuscaloosa
Teague, E. B., Birmingham
Terhune, S. R., Birmingham
Terry, C. D., Mobile
Terry, L. L., Sylacauga
Thigpen, F. M., Montgomery
Thomas, A. E., Montgomery
Thomas, B. F., Auburn
Thomas, B. F., Jr., Auburn
Thomas, H. H., Birmingham
Thorstad, M. J., Montgomery
Till, H. J., Montgomery
Toole, A. F., Talladega
Trucks, J. F., Birmingham
Trumper, A., Montgomery
Tucker, W. C., Birmingham
Tucker, W. H., Mobile
Turlington, L. F., Birmingham

U

Underwood, J. W., Birmingham
Upchurch, Sam, Birmingham
Ussery, G. C., Roanoke

V

Vesely, D. G., Birmingham
Virgin, W. B., Montgomery

W

Ward, J. K., Birmingham
Waters, H. W., Montgomery
Weinrib, Joseph, Montgomery
Weldon, J. E., Birmingham
West, O. T., Fairfield
White, W. E., Anniston
Williams, H. B., Birmingham
Williams, T. H., Montgomery
Williams, S. J., Livingston
Williamson, J. S., Verbena
Willis, C. A., Montgomery
Wilson, J. W., Tuscaloosa
Windham, L. A., Luverne
Windham, S. W., Dothan
Wishik, J. L., Montgomery
Wood, W. G., Lafayette
Woodall, W. M., Birmingham
Woods, T. B., Dothan
Wool, Jack, Montgomery
Woods, L. C., Tuscaloosa
Word, Buford, Birmingham

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Rucker
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Dr. N. B. Baroody, Maxwell
Field
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Dr. G. B. Brice, Montgomery
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Dr. Enoch Callaway, LaGrange,
Ga.
Dr. R. B. Cattell, Boston
Dr. H. L. Cecil, Birmingham
Dr. G. N. Click, Pensacola
Dr. D. M. Comford, Birmingham
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Dr. L. J. Denson, Gunter Field
Dr. F. A. Dowdy, Birmingham
Dr. L. A. Ensenat, Montgomery
Dr. Charles Ferris, Gunter Field
Dr. J. F. Garner, Dothan
Dr. W. J. Glover, Gunter Field
Dr. D. B. Gute, Milwaukee

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Field
Dr. Raymond Haringa, Gunter
Field
Dr. H. E. Hampton, Durant,
Okla.
Dr. Hugh Hare, Boston
Dr. F. W. Hastings, Chatom
Dr. E. H. Howe, Birmingham
Dr. Leon Kahn, Maxwell Field
Dr. G. H. Kojac, Maxwell Field
Dr. Daniel Langdon, Montgom-
ery
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Fla.
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Dr. F. L. Payne, Philadelphia
Dr. W. B. Pouncey, Auburn
Dr. H. B. Praytor, Jr., Maxwell
Field
Dr. G. B. Richardson, Columbus,
Miss.
Dr. Elliott Scarborough, Jr., At-
lanta
Dr. Tobias Stein, Montgomery
Dr. R. H. Stokes, Birmingham
Dr. W. R. Thompson, Gunter
Field
Dr. E. R. Torrence, Troy, Ohio

Dr. J. T. Trawick, Jr., New Or-
leans
Dr. W. H. Garner, Sanford, Fla.
Dr. Melvin Waldron, LaFayette,
Ind.
Dr. H. R. Waring, Montgomery
Dr. E. J. Waters, Jersey City
Dr. C. I. Webb, Maxwell Field
Dr. J. E. Wesp, Maxwell Field
Dr. C. H. Wiggins, Montgomery
Dr. J. B. Youmans, Nashville
Mrs. P. M. Lightfoot, Shorter
Mrs. R. K. Wilson, Aliceville
C. F. Adams, Evansville, Ind.
H. H. Altman, Birmingham
W. E. Avery, Decatur, Ga.
S. L. Avner, Montgomery
J. F. Baker, Jr., Cullman
J. F. Barnett, Birmingham
G. W. Bauhon, Montgomery
Mrs. F. L. Bibb, Shorter
K. E. Blake, Gunter Field
Bob Bond, Mobile
J. G. Box, Birmingham
A. M. Breckenkamp, St. Louis
Milton Brooks, New Orleans
H. J. Buice, Montgomery
M. C. Calhoun, Huntsville
G. H. Campbell, Birmingham
W. D. Davis, Montgomery
Buddy Dortch, Birmingham
W. A. Dozier, Jr., Montgomery

Larkin Edmondson, Montgomery	G. R. Lea, Birmingham	R. E. Roberts, Silver Springs, Md.
D. M. Egbert, Birmingham	C. E. Lonnergan, Birmingham	H. E. Robinett, Mobile
Dr. Rufus Ellis, Birmingham	Dan Maddry, Memphis	G. L. Ramsey, Philadelphia
D. B. Faust, Montgomery	W. C. Mankin, Indianapolis	Felix Rozier, New York
W. L. French, Graceville, Fla.	G. L. Mayhew, Birmingham	J. A. Scott, Elmore
Stan Flanagan, Montgomery	W. B. McClure, Montgomery	J. L. Scruggs, Jr., Montgomery
J. O. Foley, Birmingham	Elmer McKenney, Selma	E. R. Skinner, Mobile
H. E. Gifford, Atlanta	W. W. McLeod, Montgomery	Bill Smith, Mobile
A. B. Ginder, Atlanta	Jack McClendon, New Orleans	Herb Smith, Columbus, Ohio
G. C. Glass, Montgomery	J. J. McKee, Rochester, N. Y.	Dick Sobers, Birmingham
Gib Graham, Atlanta	Spratt Meredith, Birmingham	J. E. Stevens, Montgomery
W. H. Hale, Birmingham	Tom Mithen, Montgomery	W. B. Tatum, Mobile
J. V. Henderson, Birmingham	R. S. Moffett, Birmingham	W. A. Thornhill, Birmingham
P. S. Hudson, Opelika	Dan Moss, Mobile	O. C. Tisdale, Jr., Montgomery
Robert Jemison, III, Birmingham	Harry New, Panama City	A. B. Tissington, Mobile
G. A. Johnson, Charleston	Dewey Nicks, Atlanta	A. E. Turner, Sheffield
B. C. Kaiser, Birmingham	Sam O'Neal, Birmingham	B. A. Ward, Jr., Birmingham
C. E. Klapper, Birmingham	M. S. Peake, Montgomery	G. J. Williamson, Montgomery
Bob Kurvin, Birmingham	Roy Pirkle, Montgomery	Ralph Windham, Springville
A. P. Laseter, Greenville, S. C.	H. W. Porter, Jr., Pensacola	Bob Winslow, Birmingham
	Jim Pressly, Mobile	

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery
1934	26	75	97	404	53	655	Birmingham
1935	15	59	91	180	83	428	Mobile
1936	23	79	95	265	68	530	Montgomery

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1937	25	80	96	396	81	678	Birmingham
1938	18	65	78	157	63	381	Mobile
1939	29	79	96	326	84	614	Montgomery
1940	29	77	105	401	229	841	Birmingham
1941	29	66	86	211	91	483	Mobile
1942	33	75	105	249	82	544	Montgomery
1943	31	71	83	321	127	633	Birmingham
1944	33	72	92	214	110	521	Montgomery
1945	Meeting Cancelled						
1946	38	81	87	330	127	663	Birmingham
1947	34	76	91	333	124	658	Birmingham
1948	24	64	87	239	127	541	Mobile
1949	31	84	93	288	106	602	Montgomery
1950	26	85	91	391	118	711	Birmingham
1951	21	75	84	281	115	576	Mobile
1952	27	81	90	314	141	653	Montgomery

REGISTRATIONS AT THE ANNUAL SESSION OF THE WOMAN'S AUXILIARY

Mesdames	Brannon, W. T., Montgomery	Cochrane, R. H., Tuscaloosa
Abbott, C. E., Jr., Tuscaloosa	Britton, W. R., Montgomery	Colley, J. H., Troy
Alison, J. F., Selma	Brock, Jack, Gadsden	Colley, J. O., Jr., Troy
Allgood, H. W., Fairfield	Bruce, J. F., Montgomery	Coston, R. M., Birmingham
Anderson, W. D., Tuscaloosa	Brunson, E. T., Samson	Cowles, T. D., Troy
Ashurst, R. T., III, Montgomery	Caldwell, E. V., Huntsville	Crawford, A. S., Maxwell Field
Austin, B. F., Montgomery	Calloway, W., Maxwell Field	Crawford, J. M., Arab
Barnes, J. M., Montgomery	Cameron, J. M., Montgomery	Daves, J. G., Cullman
Bell, H. V., Jr., Maxwell Field	Chambliss, J. C., Cullman	Daniel, W. A., Montgomery
Bender, T. J., Jr., Mobile	Chandler, J. R., Bessemer	Davidson, A. W., Bessemer
Benkwith, K. B., Montgomery	Chenault, E. M., Decatur	Davis, J. W., Jr., Montgomery
Bibb, R. C., Huntsville	Chenault, F. L., Decatur	Davie, N. T., Anniston
Booth, B. W., Shorter	Chenault, J. M., Decatur	Dawson, H. P., Montgomery
Boozier, T. S., Montgomery	Clements, R. M., Tuscaloosa	Dennis, G. A., Montgomery
Branch, J. L., Montgomery	Cobbs, B. W., Montgomery	Donald, W. D., Maxwell Field

DuBois, J. S., Enterprise
Duncan, M. M., Huntsville
Dunn, J. E., Wetumpka
Durrett, J. H., Tuscaloosa
Durrett, J. J., Birmingham
Edge, O. N., Troy
Edwards, W. A., Wetumpka
Elmore, J. D., Birmingham
Emfinger, O., Union Springs
Farrior, J. H., Montgomery
Faust, D. B., Montgomery
Finney, J. O., Gadsden
Garner, J. F., Dothan
Gayden, L. R., Montgomery
Gilkey, Harry M., Kansas City, Mo.
Gill, D. G., Montgomery
Gipson, A. C., Gadsden
Haggerty, R. J., Maxwell Field
Hagood, D. S., Montgomery
Hill, L. L., Jr., Montgomery
Horn, J. R., Bessemer
Hough, J. S., Montgomery
Howell, J. P., Selma
Howle, J. A., Hartselle
Huey, T. F., Anniston
Hunt, Marston, Boaz
Hutchinson, H. H., Montgomery
Jackson, B. F., Montgomery
Jenkins, J. F., Jr., Birmingham
Johnson, Claud, Montgomery
Jordan, G. F., Maxwell Field
Kessler, C. R., Birmingham
Killian, C. D., Fort Payne
Kimmey, J. M., Elba
Knight, J. H., Birmingham
Kojac, G. H., Maxwell Field
Kocour, E. J., Montgomery
Laslie, J. Cobb, Montgomery
Lauter, M. A., Mobile
Leatherwood, E. F., Hayneville
Lewis, T. K., Birmingham
Long, D. J., Montgomery
Long, I. R., Montgomery
Marrs, T. C., Montgomery
Martin, J. A., Montgomery
Matthews, A. D., Ozark
McCarn, O. C., Jr., Birmingham
McNease, B. W., Fayette
Meadows, J. A., Birmingham
Morgan, J. O., Gadsden
Newburn, G. W., Jr., Mobile
Nickson, H. C., Montgomery
Nodine, E. R., Montgomery
Norton, T. B., York
Oakley, Park, Jr., Maxwell Field
Oakley, Park, Sr., Maxwell Field
Palmer, Glenn, Montgomery
Parker Robert, Montgomery
Parker, M. V., Maxwell Field
Paul, T. O., Birmingham
Paul, W. G., Geneva
Payne, W. N., Bessemer
Penton, J. R., Montgomery
Perry, G. T., Brewton
Perry, J. W., Montgomery
Peters, G. S., Montgomery
Pilkington, J. S., Selma
Pratt, A. C., Centerville
Praytor, H. B., Maxwell Field
Prescott, W. E., Jr., Birmingham
Reed, T. W., Brewton
Reim, N. H., Tuscaloosa
Reynolds, F. D., Montgomery
Riggs, F. W., Montgomery
Rosen, H. L., Montgomery
Rosser, W. J., Birmingham
Rowe, M. S., Gadsden
Salter, W. M., Anniston
Shannon, P. W., Birmingham
Simpson, S. Paul, Gadsden
Smith, G. H., Birmingham
Smith, J. Sam, Montgomery
Smith, W. H. Y., Montgomery
Smith, W. L., Montgomery
Stabler, A. A., Greenville
Stanley, J. F., Enterprise
Stitt, Frank, Cullman
Stokes, E. M., Montgomery
Suggs, S. D., Montgomery
Sweeney, D. B., Birmingham
Teague, E. B., Jr., Birmingham
Terry, C. D., Mobile
Thigpen, F. M., Montgomery
Thomas, A. E., Montgomery
Thuss, W. G., Birmingham
Truss, Claude O., Maxwell Field
Virgin, W. B., Montgomery
Walker, W. N., Maxwell Field
Warren, P. H., Jackson
Waters, H. W., Jr., Montgomery
Webb, C. F., Maxwell Field
Webb, W. C., Maxwell Field
Weinrib, Joseph, Montgomery
Werp, J., Maxwell Field
White, D. A., Jr., Birmingham
Wiley, T. M., Jr., Fayette
Wilkerson, A. F., Marion
Williams, J. R., Selma
Wilson, J. W., Tuscaloosa
Wishik, J. L., Montgomery
Woodruff, G. G., Anniston
Wooldridge, B., Maxwell Field
Zailsky, J. E., Montgomery
Wahlquist, Harold F., Minneapolis, Minn.

AMERICAN MEDICAL ASSOCIATION NEWS

GIVES SIMPLE RULES FOR TREATMENT OF ACNE

Most cases of acne, a prevalent skin disease of teen-agers, can be cured in a reasonable amount of time by following a few simple rules, in the opinion of Dr. Robert P. Little, of Quebec, Canada.

Writing in the current Today's Health, published by the American Medical Association, Dr. Little stressed the necessity of cleanliness in the treatment of the affliction.

"Acne is the plugging of the oil glands," he said. "It is logical, then, that any primary treatment should remove these plugs. The simplest way is to wash the affected area thoroughly with soap and warm water

several times a day. The skin should then be dried with a rough towel.

"This repeated treatment will remove many of the blackheads and prevent the formation of pimples by removing the acne bacteria. Along with this, the hair and scalp should be shampooed at least once a week (better twice a week) with a good soap.

"In men, especially, the hair should be kept trimmed. Everyone should keep the nails cut short and avoid touching the face with his fingers. The application of various creams to the skin may, at times, be beneficial. But girls with acne should avoid greasy skin creams, which often aggravate it."

Factors which may aggravate acne, Dr.

Little pointed out, are drugs such as iodides and bromides; exposure to certain oils and tars; foods such as chocolate, nuts, fish and pork; and systemic derangements such as infections, anemia and emotional disturbances.

Dr. Little warned against squeezing the pimples, especially those in the danger areas around the forehead, nose, cheeks and upper lip. Certain veins from these areas, he said, drain into veins that lie close to the brain, and if an infection spreads through them, a brain abscess may form and death result.

Acne, according to Dr. Little, occurs between puberty and the age of 25. It can be found not only on the face, but on the upper back and chest, the shoulders, and, rarely, on the trunk and limbs. Although its exact cause is not known, it is now believed that acne results from the action of the male sex hormone (which is found in both men and women) on rapidly growing skin, particularly the oil glands and hair.

Acne may appear alone or with other disturbances of the skin, he said. People who have an oily, greasy skin or scalp are more likely to suffer from acne, and, in such people, the disease is apt to be more severe than in those with a dry skin. Acne also occurs frequently with dandruff and with male-type baldness, which begins in adolescence. Such related disturbances seem to run in families, he added.

If the simple rules outlined by him fail to help the condition, Dr. Little stated, the

patient should visit a dermatologist so that more radical therapy such as x-ray, ultra-violet rays, extraction of the pimples or drugs may be instituted.

"Simple cases of acne leave no noticeable scar," he added. "Severe cases, nevertheless, may result in permanent scarring. Even here, however, modern science has come to the rescue, and acne scars quite frequently yield to treatment by a doctor or dermatologist."

SELF-EXAMINATION BY WOMEN BEST BREAST CANCER CONTROL

If breast cancer is to be detected at an early stage in its development, it is the women themselves who must do it, in the opinion of Dr. C. D. Haagensen, of the Institute of Cancer Research and the department of surgery, College of Physicians and Surgeons, Columbia University, New York.

"In order to be reasonably certain of detecting breast carcinoma at an early stage, the breasts must, in my opinion, be examined at least every two months," Dr. Haagensen wrote in the May 24 Journal of the American Medical Association.

"There are not enough physicians, enough time, or enough money to achieve this, even if women could be persuaded of the desirability of consulting physicians frequently for physical examination.

"I am today firmly convinced that teaching women to examine their own breasts is the best hope of improving our control of breast carcinoma."

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